THE URBAN PRECINCT
A CASE STUDY FOR AN URBAN-INSPIRED ON-CAMPUS MEDICAL CENTER AT VIRGINIA TECH

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Hans Christian Rott – Committee Chair
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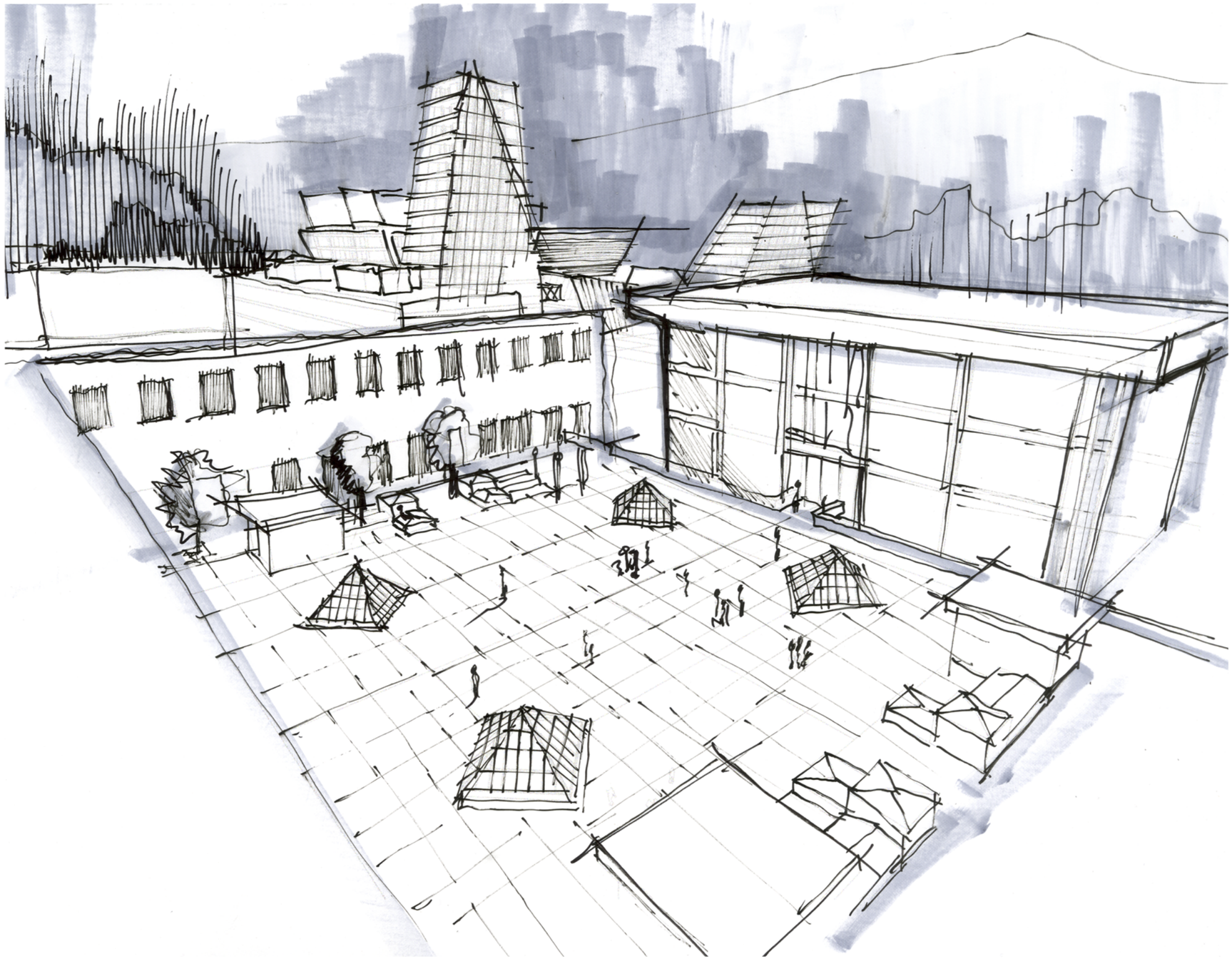
ABSTRACT

This Thesis is a case study on the design and development of a medical center comprised of three buildings to be located on the Blacksburg Campus of Virginia Tech. The three buildings will form a space unlike any other space on campus -- it will be an Urban Precinct that will introduce a new and inspiring space where students can experience urban life on their own traditionally rural campus.

IN DEDICATION TO
THE INNOCENT SOULS WHOSE LIVES WERE
SENSELESSLY TAKEN FROM US ON

APRIL 16, 2007

WE WILL ALWAYS REMEMBER YOU



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INTRODUCTION

The purpose of this thesis is to propose an urban inspired Medical Center on the Blacksburg campus of Virginia Tech. This campus will have three main buildings - all of which will be connected. There will be an In-Patient and Out-Patient Tower, a Medical School which will house all of the medical disciplines, and a biomedical research tower. This thesis explores the location of where such a large project can occur on campus and why. But more importantly it will explore and address the idea of this campus being its own urban precinct - one that would have its own architectural distinction and provide a unique and dynamic feeling to the Virginia Tech campus experience.

BACKGROUND

Currently there is no College of Medicine or medical center on the main campus of Virginia Tech. The university does however have a medical school that is located in Roanoke, VA and is associated with the Carilion Medical Centers. The program itself is a young one - far younger than some of the other competing institutions in the region. It is also a fast-growing program with many new students enrolling each semester. This is of course in tandem with the exponentially growing need of medical professionals nationwide. Most universities house their medical programs on campus or at least "sub-campuses" that are easily accessible from their main campuses. I think this provides a great interface for the students and engages them with the rest of the students on campus. As rigorous as the various medical programs are in their courses of study, it is still important for students to be able to enjoy the overall collegiate atmosphere that their university has to offer.

THE SEARCH FOR DENSITY AT VIRGINIA TECH

For generations, the campus of Virginia Tech lacked any density in its layout. Each time a new building was constructed, it remained far from other buildings. That all changed when a new campus masterplan was produced in 1995 that proposed a new infill strategy to help densify the campus. Therefore, much of the new construction afterwards was done within the framework of this masterplan. This projects works within this framework but adds a newer twist to it by creating a "Precinct" that is unencumbered by restrictions of "style" and creates a new feel on campus.

PRECINCT

A Precinct is defined in many different ways but I feel that the one most fitting for my thesis is "*an area of thought or action a province or domain.*" For the reason of engaging this new college with the rest of Virginia Tech, this is why I am proposing this project on the main Campus in Blacksburg to be located on the existing parking lot with Prices Fork Road, West Campus Drive, and Perry Street as the borders of the Precinct. The three new buildings within the Precinct will create a new urban atmosphere buttressed by an "Urban Avenue" stretching from the northern most point of the site and spilling into the main campus.

ARCHITECTURE

It goes without saying that the architecture of the three buildings will play a critical roll on how the Urban Precinct will function. From the early development of the project, the vision of what the architecture would look like never changed. In particular I envisioned this Urban Precinct to use materials such as steel, glass, and metal. This also never changed. After making a slew of sketches and digital models, it was then time look for precedents and a design aesthetic that would fit the intentions of the project. Not only were the programmatic aspects of hospitals researched but also of how campuses are designed and how urban space is created. All of these activities played a vital role in designing this project.

Every time a student walks past a really urgent, expressive piece of architecture that belongs to his college, it can help reassure him that he does have that mind, does have that soul. - Louis I Kahn

PRECEDENTS AND INFLUENCES


A


B


C


D

The built environment has always been an influential part of life and development. When I create and design things, it would be unfair to say that there weren't certain factors of life and or people that were heavily influential to me at different times. When I am creating architecture, I look to my peers, my mentors, and at all of the historic precedents to guide my design into a direction that makes sense. This project was no exception as there were precedents - both historic and modern that helped me in the design and development. The concepts of great architecture also influenced me in this process. Even though I saw this project go into the direction of a case study on creating an "Urban Precinct" I wanted it to also be about the architecture and how that architecture can play a positive roll in the shaping of the Precinct. Therefore I narrowed this exploration into several categories.

HIGH END DESIGN AND URBAN INFILL

One of the campuses that greatly influenced the direction of my projects was the University of Cincinnati in Ohio. At first, it wasn't really about the campus planning but it was all about the design and form of the newer buildings that I found to be extraordinarily compelling. However, it was exactly the type of campus planning on the urban scale that heavily influenced the project. This was a prime example of how public space can be created out of infill buildings. I recognize of course, this campus has a different historical discourse in its development as an institution of higher learning and its geographic location in a densely urban setting. Unlike Virginia Tech, however, the University of Cincinnati is unencumbered by restrictions of vernacular "styles" making it an ideal place for designers.

PHOTOGRAPHS

A , B, AND C - UNIVERSITY OF CINCINATI Joseph A. Steger Student Life Center, ARCHITECT: Moore Ruble Yudell Architects & Planners Santa Monica, CA 2006
(PHOTOGRAPHS TAKEN BY AUTHOR)

D - UNIVERSITY OF CINCINNATI CAMPUS RECREATION CENTER , ARCHITECT: MORPHOSIS, Los Angeles, CA 2005
(PHOTOGRAPHS TAKEN BY AUTHOR)


E


F


G


H


I

MONUMENT AND LANDMARK

Perhaps one of the historic pieces of architectural achievements that has influenced me more than anything else is the Louis I. Kahn's Salk Institute -- not only for its compelling and moving design but also of the space that the building creates around it. It feels quite urban but it also creates the sense of monumentality despite the fact that it is a small facility. This is achieved through the diligent spacial planning and design. I wanted to give recognition to this project because it also became a milestone of how inspirational spaces can be created by the buildings themselves.

The Cathedral of Learning at the University of Pittsburgh is also a precedent that is uniquely compelling in that it serves as a landmark to an urban university. I looked to this historic precedent as an influence to the Biomedical Tower which is in my proposal. Since I was designing an urban space, I felt the need to create a new iconic landmark as a recognizable but not imposing cornerstone to the entire project.

JUXTAPOSITION OF MODERN AGAINST HISTORIC

Another Influential project in the development of this thesis is my undergraduate Alma matter, West Virginia University. Much like Virginia Tech, it is in a suburban setting and is a land grant institution with a similar mission. However , recently there have been several projects like the Life Sciences Center (image H) and the Biomedical Research Center (Image G). The bold and sleek design of these projects were very compelling - especially against the backdrop of some of the more traditional architectural icons of the campus. Each of these projects created compelling urban spaces.

PHOTOGRAPHS

E & F - Salk Institute, Louis I Kahn, Philadelphia, PA 1960
G - University of Pittsburgh's Cathedral of Learning, Architect: Charles Klauder, Philadelphia, PA 1926
H - West Virginia University Life Sciences Center, Architect: Payette, Boston, MA 2003
I - West Virginia University Irma Byrd Biomedical Research Center, Architect: Stanley Beaman & Sears, Atlanta, GA 2007

** PHOTOGRAPHS TAKEN BY AUTHOR*

EXISTING SITE

The proposed site of the new Medical Campus is on the northwestern edge of campus and is encompassed by Price's Fork Road to the North, Campus Drive to the West and Perry Street to South. Currently the site is used as a parking lot which has the capacity of approximately 350 vehicles. There is approximately a 20-foot difference in grade between the northern part of the site to southern end in which it cascades towards the south. This site was chosen not only because of its vastness but also its strategic location on campus and its proximity to some of the major transit points. The existing roadways are also an advantage as they would be left in tact with the proposed design. The varying elevation is also an advantage in the designing dynamic urban spaces that cascade along with the grading.

J

K

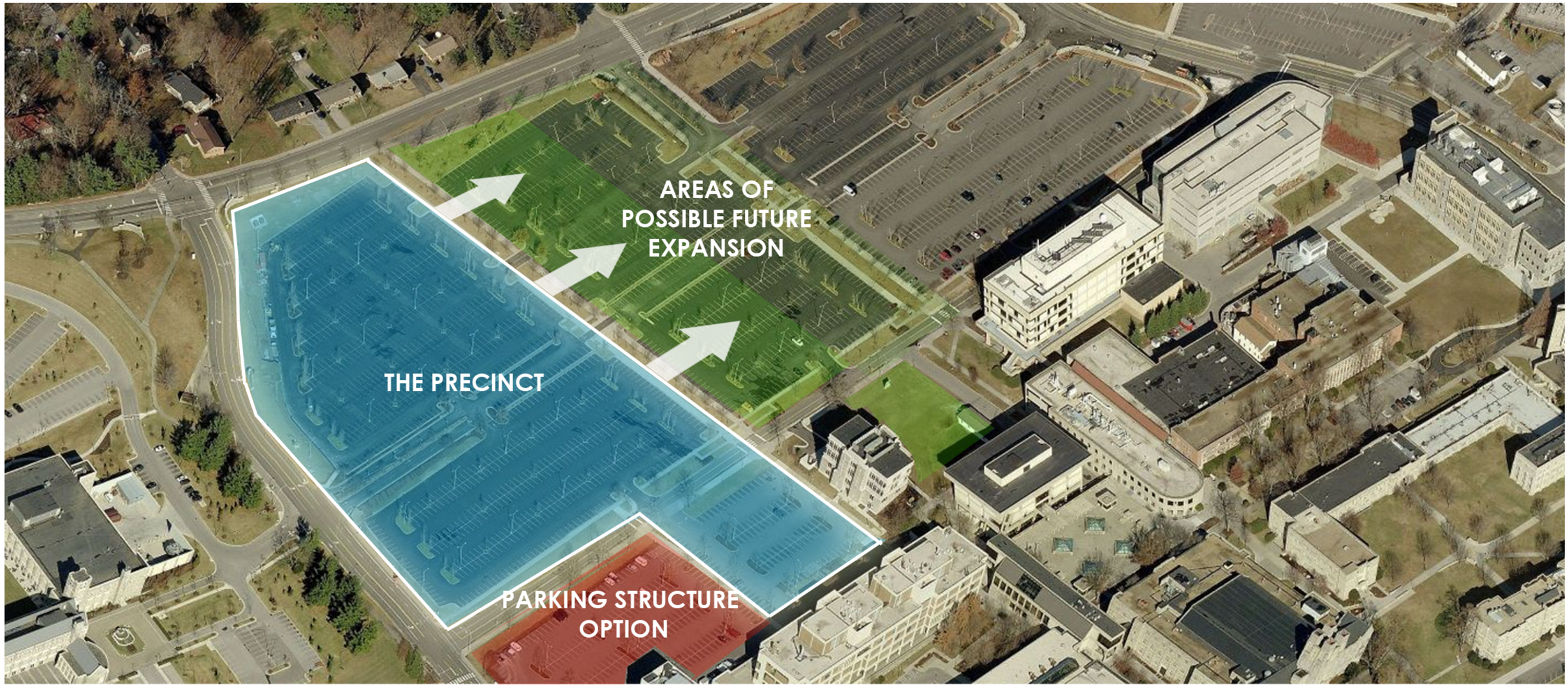
CONTEMPORARY END

Perhaps one of the most unique aspects of the site and of the campus in general is the existence of an entire "edge" that was developed in the 70s in which some referred to as the "contemporary end" of campus. It is a collection of several buildings such as Derring Hall (designed by Walter Gropius and the Architects Collaborative), Cowgill Hall, and Whittemore Hall. These are perhaps some of the campus's most unique buildings to which they were not designed as a response to the Campus's traditional Collegiate Gothic appearance and "style" rather they took into account the campus masterplan and geometry. For example, all of the axis are fully respected in relationship to all of the other buildings. But the broader picture is that these are buildings to be used for advanced engineering research and studies and were designed as expressions of technological advancement that the university is reputable for.

L

M

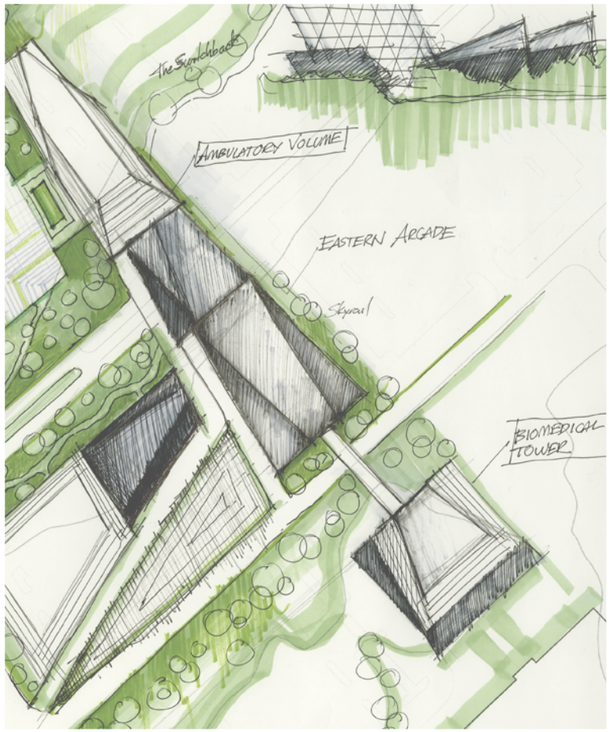
PHOTOGRAPHS TAKEN BY AUTHOR


AREAS OF
POSSIBLE FUTURE
EXPANSION
THE PRECINCT
PARKING STRUCTURE
OPTION

THE "ORGANIC" SCHEME

When I first began to develop this project, I approached it in a way that became rather challenging and unwieldy. The original parti focused more on the programming and space analysis of a three-building medical center and then in the broader scope the types of landscapes it created and the ideas those landscapes invoked. So with the original arrangement seen below, what results is an awkwardly spaced monolithic project. It would look very similar to a suburban office development that would take no account of any urban fabric associated with it. It became known to me as the "Organic Scheme" and this was not the effect I was looking for.

Indeed I wanted to create an urban-something and what I was searching for was an edge and eventually I was found myself developing an Urban



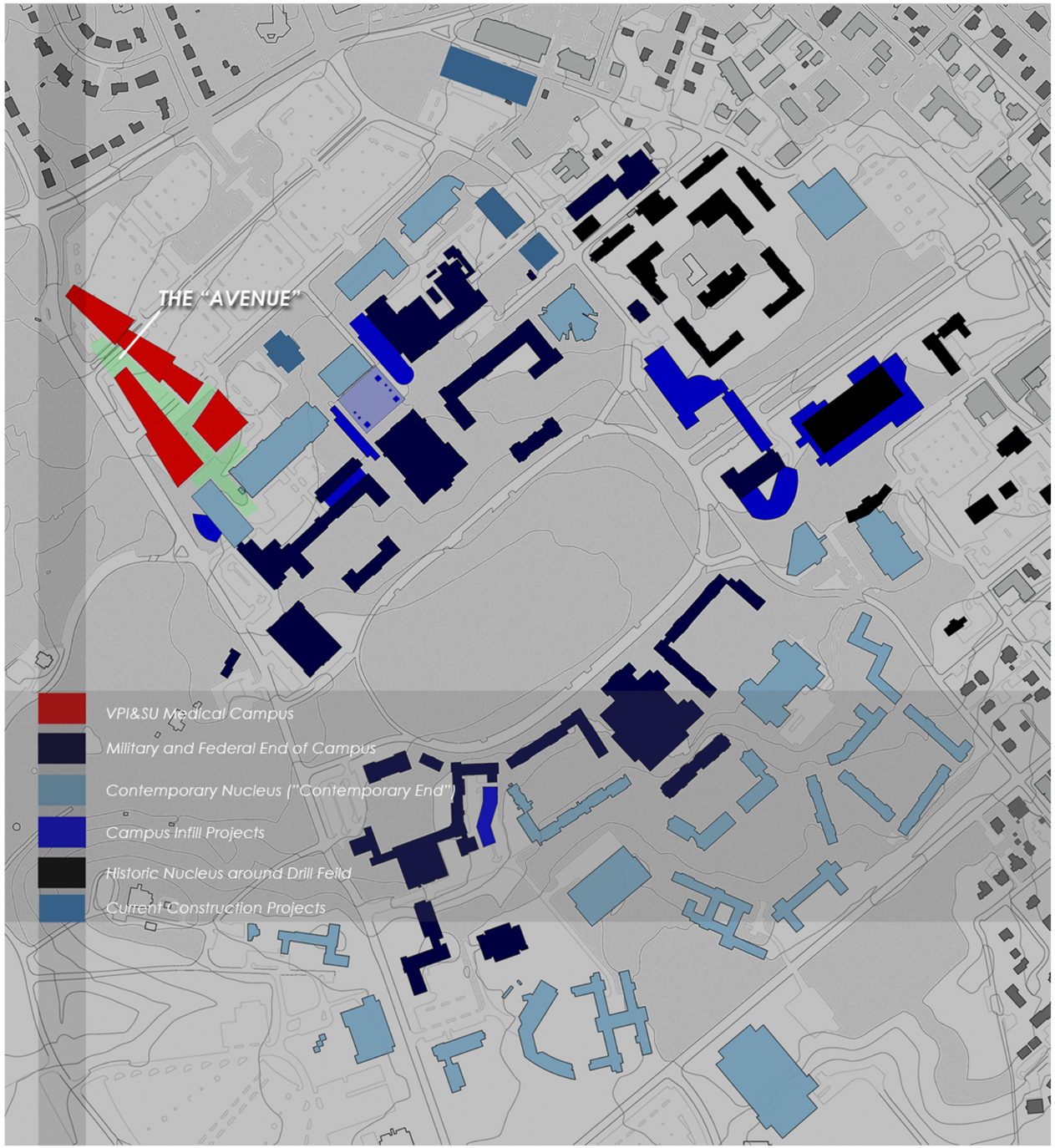
THE "LINEAR" SCHEME

After several modifications to the building arrangements, it became abundantly clear that it really wasn't about the plan arrangement that was important to the project, rather the urban spaces they create. Thus within the same site, the building were rearranged in a linear pattern that I eventually referred to as the "Linear Scheme" - this was a more holistic approach to the site and conveniently a new "Pedestrian Avenue" was created that is bound by all three of the buildings. These spaces can be used as multiple pedestrian epicenters with opportunities for parks, kiosks, recreation areas for patients and students, and perhaps even a mix-use aspect where retail can be introduced.

It is also worth noting that the "avenue" that has been created is a pedestrian-only avenue that lends itself to the traditional collegiate feel of the entire campus. This avenue also continues south in between Derring and the Physics Building.

After many studies, I determined that this scheme was the most effective because it created the nucleus of the Urban Precinct.

Not TV or illegal drugs but the automobile has been the chief destroyer of American communities. - Jane Jacobs (Dark Age Ahead)



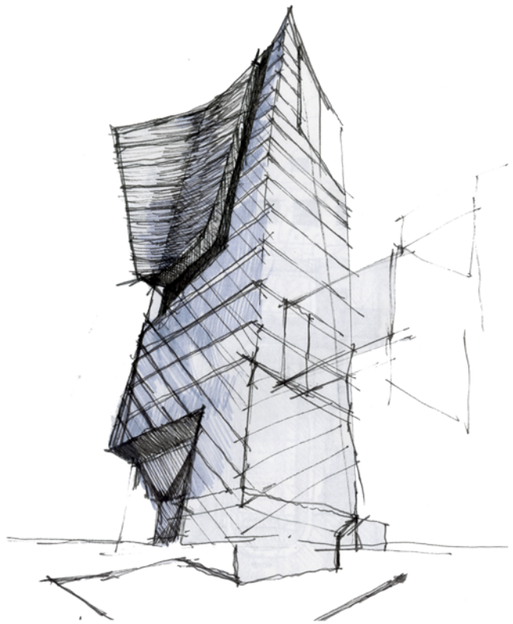
CAMPUS INFILL

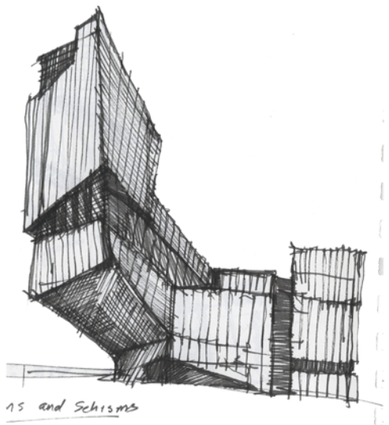
Historically, the campus of Virginia Tech has been spread out with many buildings that cover a wide expanse of property. As beautiful as that was for people to experience, it created a sense of disconnect from one campus end to the other. This changed with the introduction of the 1997 Revised Campus Masterplan that introduced the idea of Campus Infill. The idea was to generate new spaces within campus that "connect" buildings. It is quite similar to the idea of Urban Infill which many cities have been adopting as a strategy for growth. In principle, I am using the same idea because the parking is an ex-pansive space that contributes to the barren landscape. Instead of being introduced to the campus with an immense parking lot, you would instead be introduced to to a "cutting-edge" new research facility that serves as a portal to the rest of the beautiful campus.

Furthermore this can be seen as a more advanced phase of the Campus Infill Program as this project encompasses multiple buildings that form my proposed Urban Precinct. It is essentially marrying the ideas of the infill program to a next generation of campus planning.

EARLY DEVELOPMENT OF DESIGN INTENT AND FORM

Early in this project I had a vision of what the New Medical Campus would look like and that vision never really changed. However, what I really felt the need to create was a vision and what the project will all look like in its entirety - the whole picture. There was a simple concept that stayed uniform throughout the entire process and that was what the three buildings were used for. Therefore my proposal includes three buildings on the site - a traditional medical school that run along the eastern part of the site, an in-patient and out-patient facility, and a biomedical research tower that will serve as the landmark to the project. Each one of these buildings are referred to throughout this exploration as a "volume" to be placed on the site as they each expressed important "nodes" of the urban experience that I wanted to create. Once I established these locations, I felt it was the right time to begin designing the buildings. In doing so I began to explore material and the nature of the design intent.
I had become highly inspired by the "multi-perspectiv al" movements (as seen in my precedents)that were becoming influential and I instantly thought that this project would be designed in this way. How, I would justify this on a campus that seemingly adheres to a traditional vernacular was often the cause for debate but then I realized that it is all about the idea of technology which is a corner stone of the mission of Virginia Tech - as an advanced institution. The idea of "high-tech" is what I wanted to convey in the design.

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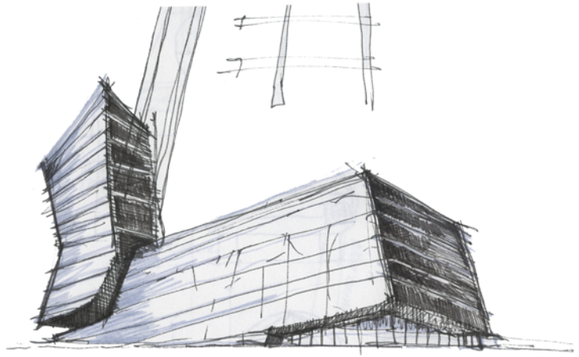
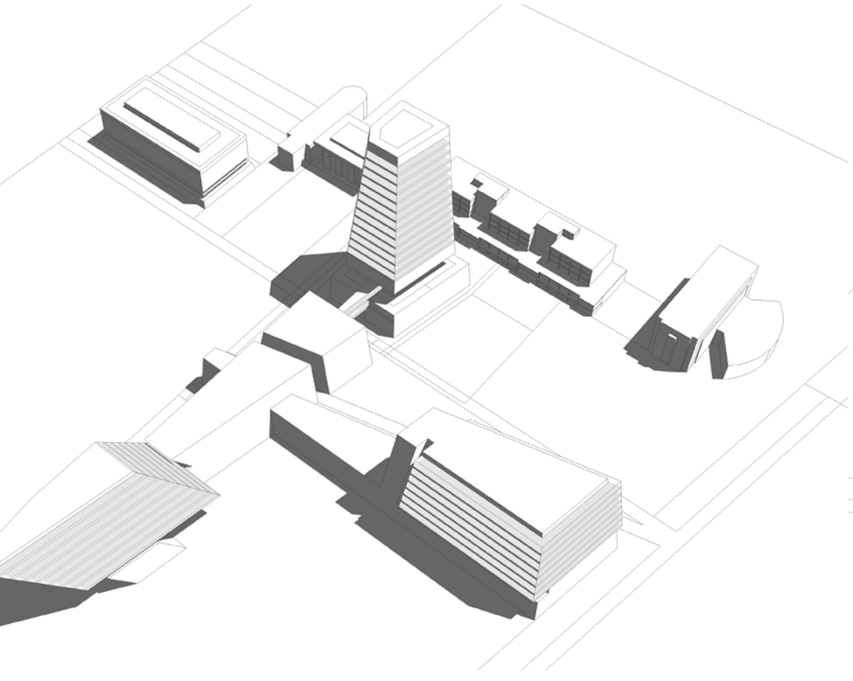
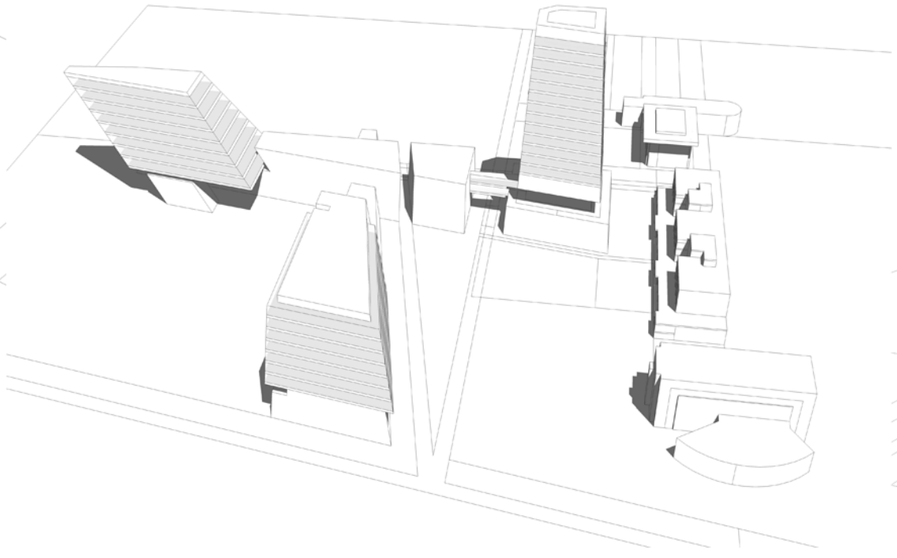
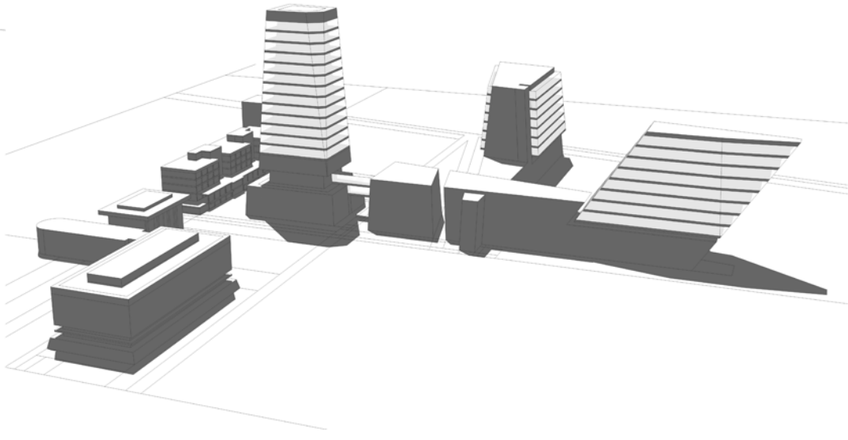


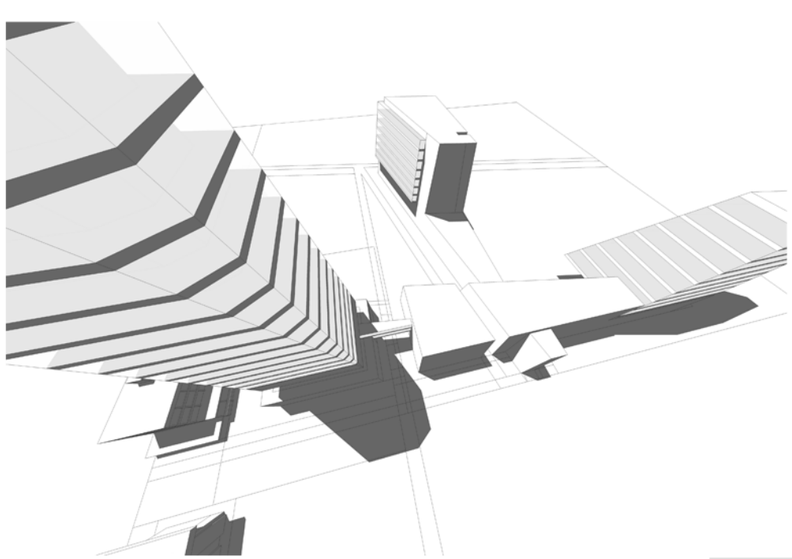
FURTHER EXAMINATIONS OF URBAN SPACE

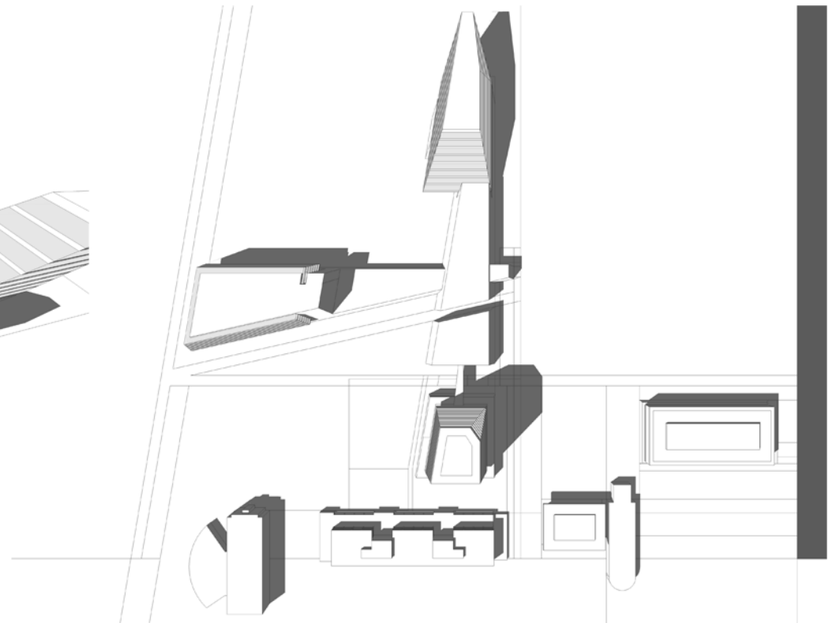
After exploring different ways of designing the buildings, I encountered a problem that needed an urgent solution before being able to continue with the schematic design of the buildings. The actual building layouts were not where I wanted them to be and instead there were far too many"voids" created by buislding that were far too distant from one-another that only contributed to the lack of density on campus. Those The problem did not rest on the actual buildings themselves - rather of their peculiar formation which I had called the "Organic Scheme." From the horizon the three buildings began to look like typical suburban office buildings awkwardly rising out of a forest canopy - this was one of the reactions I had heard and was never to be my intention. The other concern was that the three buildings had come to take on the appearance of a mega project that centered around the aesthetic of the automobile. As Stephen Verderber contends in his book, *Innovations in Hospital Architecture,* university medical centers have begun to look like imposing cities. And this was another case in the layout and over all design I wanted to avoid at all costs. Verderber points out some of the advances even happening in countries like Saudi Arabia and the UAE where entire medical centers are being proposed in a way that gives back to the urban community or the university that they are a part of. This was a concept that I wanted to pursue and the best way to do this would be to re-examine the layouts of what was proposed before. The next images illustrate some of the problems with the "sub-urban" aspect that I was trying to avoid.

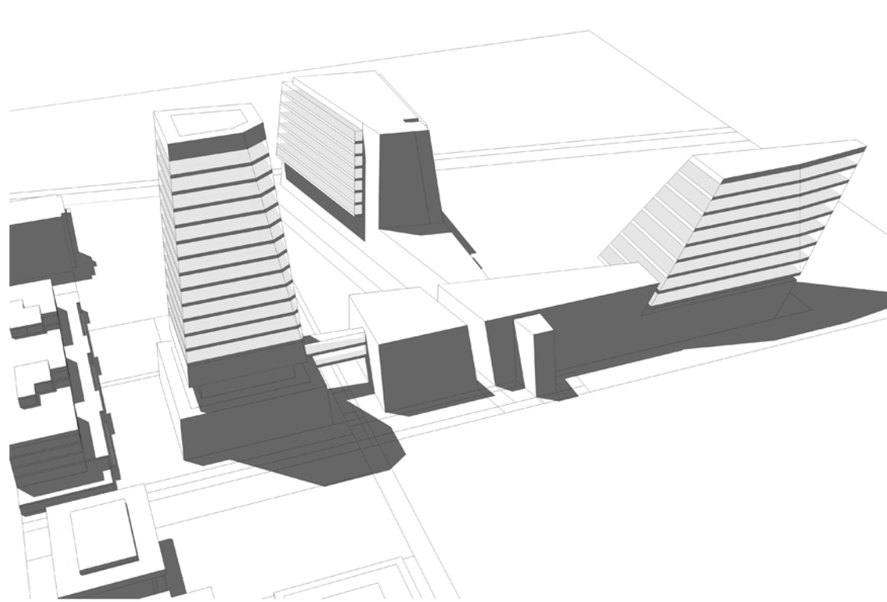








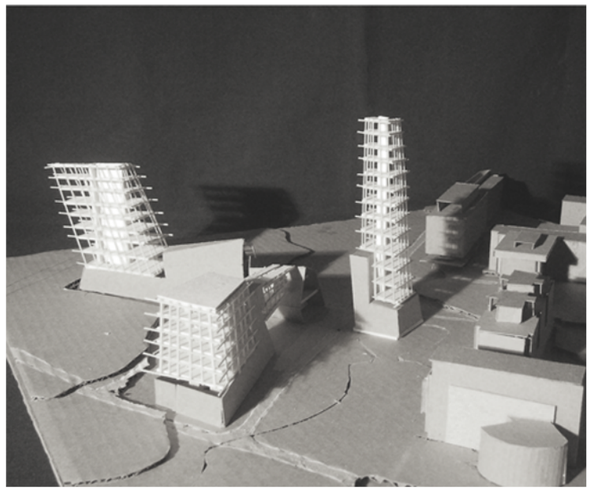


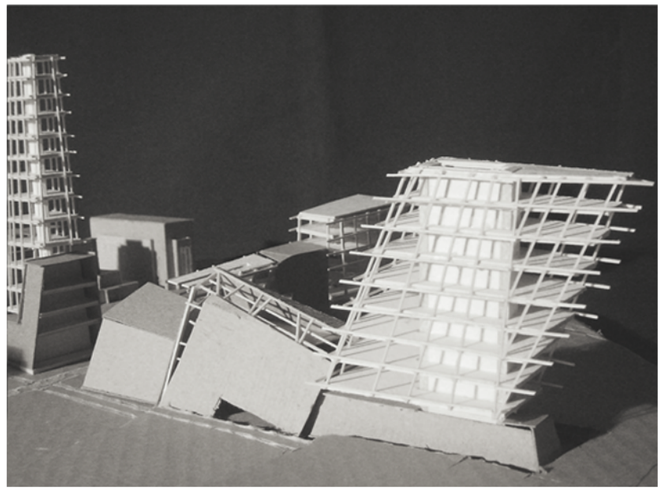


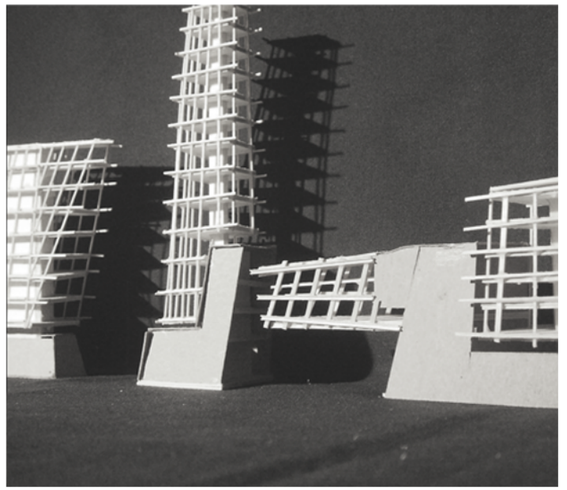
DEVELOPMENT OF THE "URBAN PRECINCT"

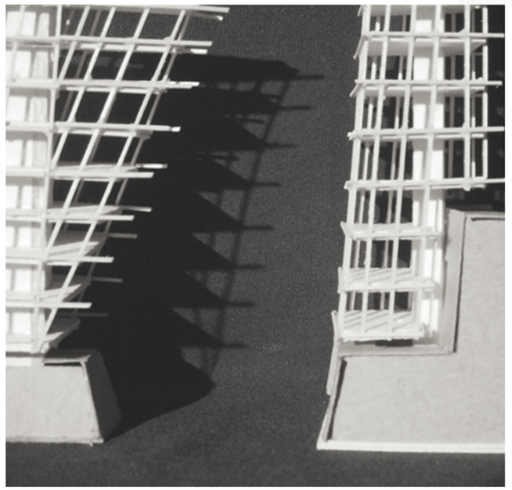
Having observed some of the case studies that Verderber mentioned in his book, I developed more sketches and digital models, however, I felt that what was needed was to make physical models of the site and diagrammatic models of the each of the three buildings. This was a turning point in the project that was successful in allowing me to establish how to create an Urban Precinct out of the buildings I proposed. At that point I was convinced that I had the forms of the buildings at a level of completion and the models were a pivotal milestone. What was now left was to really develop the layout in a way that would help realize the urban nature of this project. After I was confident enough that the models gave me what I was looking for, I further developed the idea through a series of sketches and then formal drawings you will see later in this thesis.

The models allowed me to finalize the layout of the project and begin to explore the opportunities the space created. What was created was a dynamic space in the middle of the three buildings that I began to refer to as the "Pedestrian Avenue" within the "Linear Scheme" in the Urban Precinct parti that I had identified earlier. The Pedestrian Avenue would cascade downward along with the existing topography through a series of paved open pathways, for the purposes of pedestrian transit. This Avenue is a wide avenue void of any vehicular traffic so students and community members can "flow" through in a convenient way. An additional advantage is that many events such as farmers markets, assemblies, and other outdoor events can take place here without interuption of vehicular trafic.









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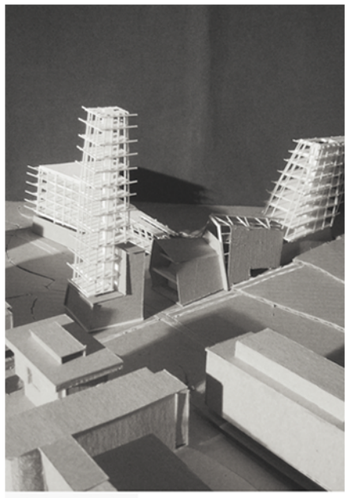

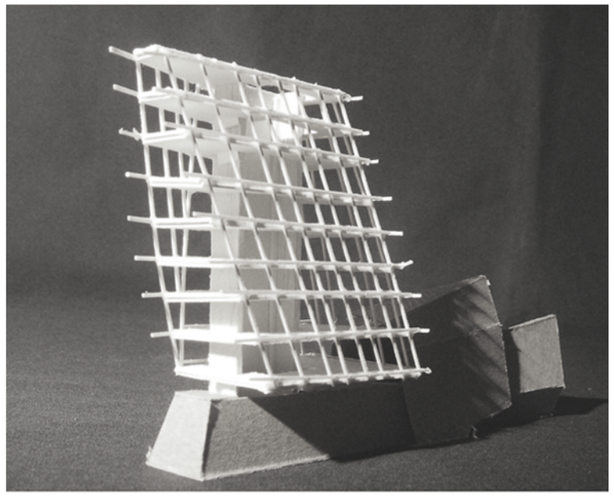
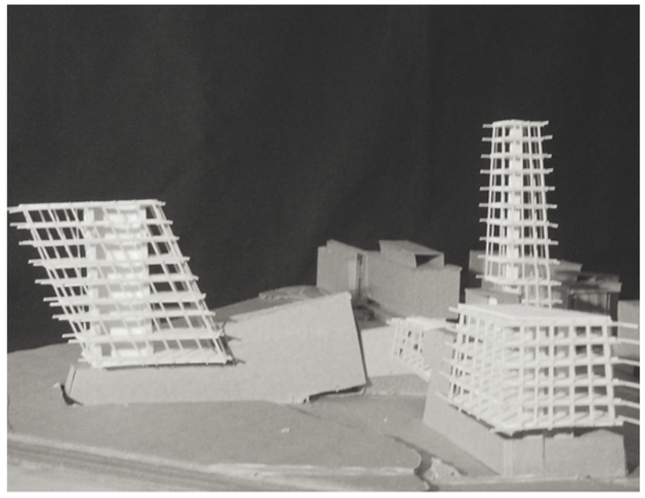
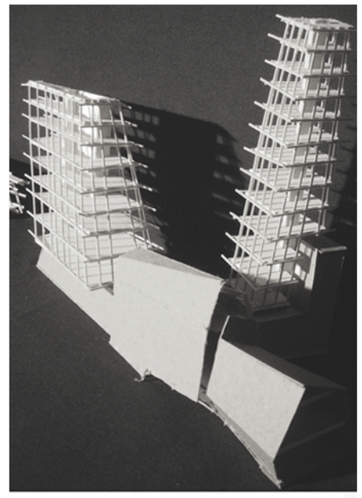

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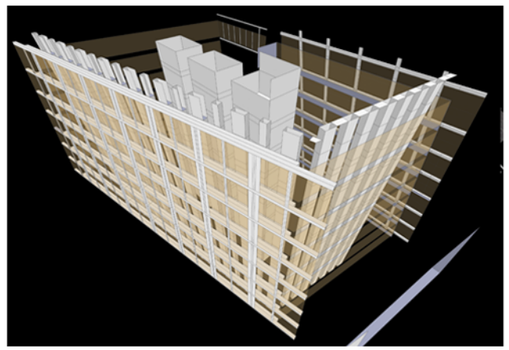
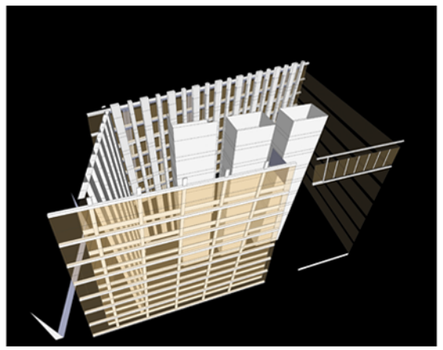
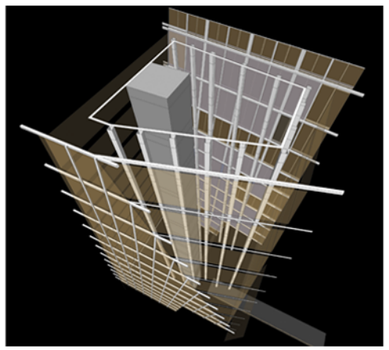
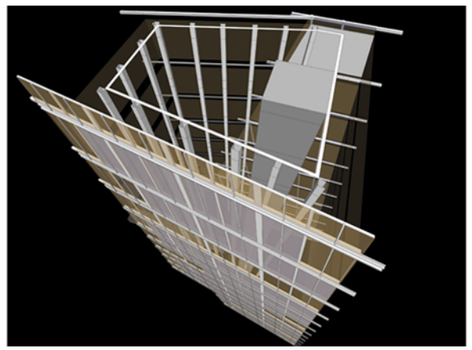
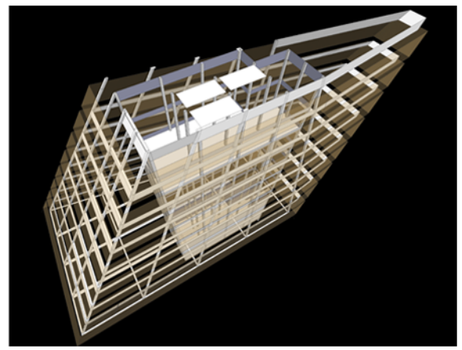
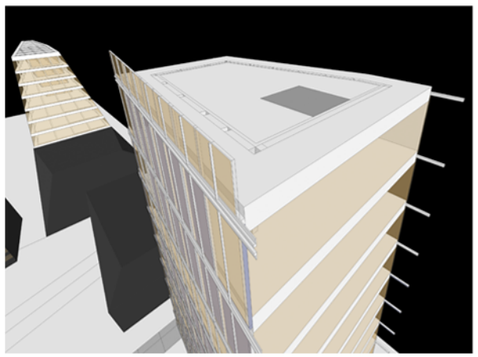
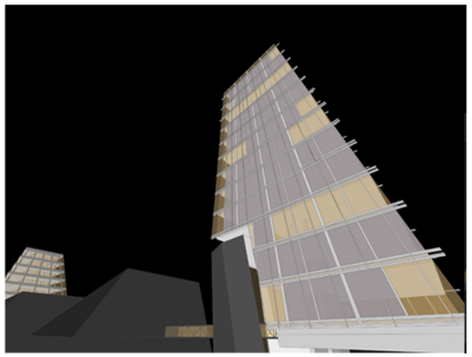
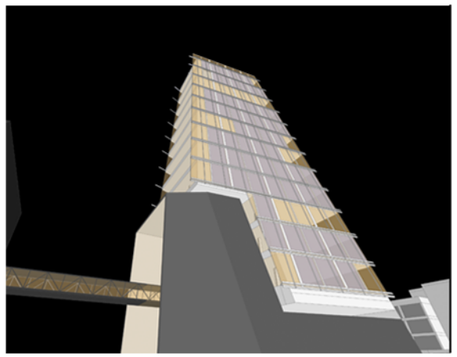
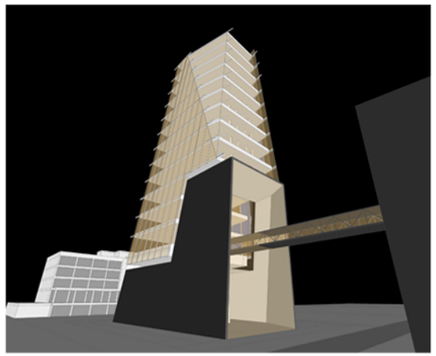
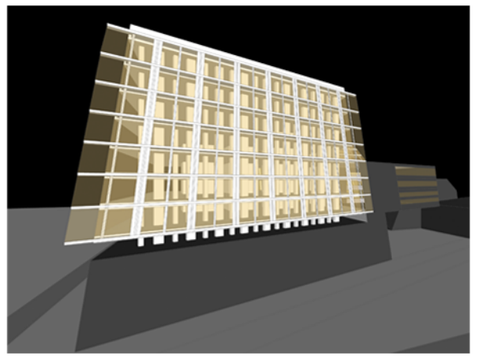
DEVELOPMENT OF THE ARCHITECTURE

Indeed the architecture of the three volumes was important from the very beginning and I had immediately had a vision on what the buildings would look like at an earlier stage as mentioned. This time I needed to develop it further in order to feel comfortable in designing the urban spaces. But perhaps one of the ideas I wanted to avoid is what has been seen in many other hospital projects and that was the "monolithic" appearance of one single building - often imposing and trivial in design as Stefen Kruse discusses in *Masterpieces: Hospital Architecture and Design*. And this is absolutely a valid point as many including myself often associated hospitals with that kind of cumbersome and imposing aesthetic. As further discussed by Kruse, there have been many advances in the development of medical campuses worldwide - especially overseas where some of these campuses were built from the ground up. As I mentioned earlier when first discussing the early architectural explorations, I was highly motivated by some of the modern architectural movements of Morphosis whose many projects embraced the aesthetic of change and motion as seen in *photograph D* while architects like Norman Foster embraced the "high technology" aesthetic approach to his projects. These architectural aesthetics where what guided my inspiration. The following images will show how I approached the building envelopes and base building core and shell designs which were eventually designed further and emphasized the aesthetic of motion and change as it pertains to the ideas of research.

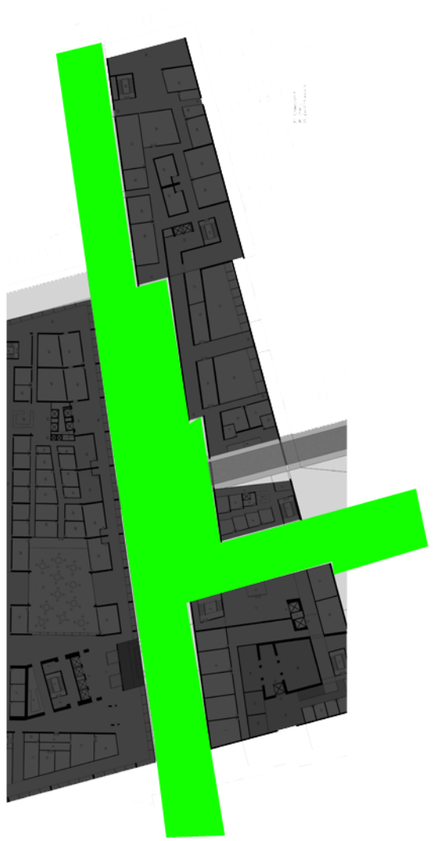






THE “PEDESTRIAN AVENUE” AND THE CREATION OF URBAN SPACE

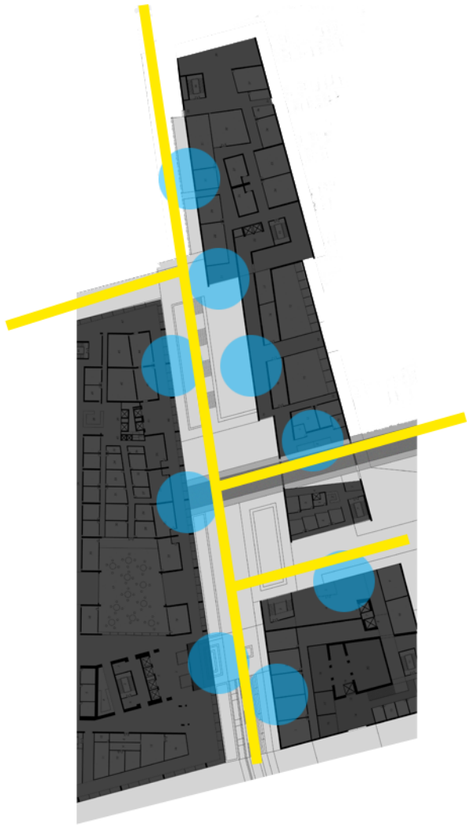
av·e·nue - A wide street or thoroughfare - A means of access or approach

Once the Linear Scheme was developed even further and the architectural ideas were in full development I thought it was necessary to shift focus onto the nature of the urban space that I was trying to create. One of the first new spaces that were created as a result of the repositioning of the buildings is what I eventually referred to as the “Pedestrian Avenue” as you will see in the next two pages. Having already established the existence of the “Avenue” and what its purpose would be - I wanted to develop it even further and in doing so - I revisited one of the precedents that I was observing all along which was the University of Cincinnati Student Life Center in which the form of the building enabled the landscape to be transformed into an urban space where students, faculty, and patients can enjoy. I wanted to create a similar feeling but add more concepts to it like kiosks and water features. But the major difference between that project and this thesis is the overall use of the space - the Student Life Center is a place for students and faculty while this project is a major medical center with the mission to serve tens of thousands. So I had to conduct a series of studies seen in the next diagram to illustrate the vehicular versus pedestrian access to the site. This study revealed one area where vehicular and pedestrian traffic converge and that is where the road terminates into the entrance of the parking structure. I think this interaction is important in conveying the sense of urbanism as the sidewalks are wide but the actual road is only one lane in each direction.

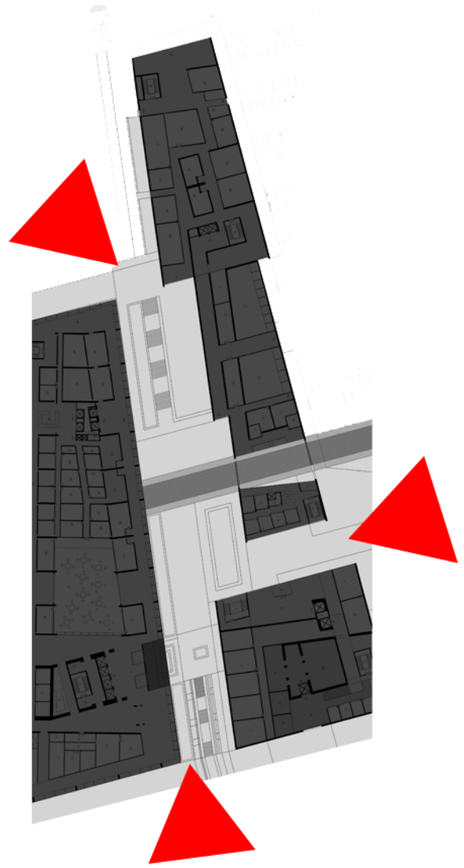
MOVEMENT DIAGRAMS



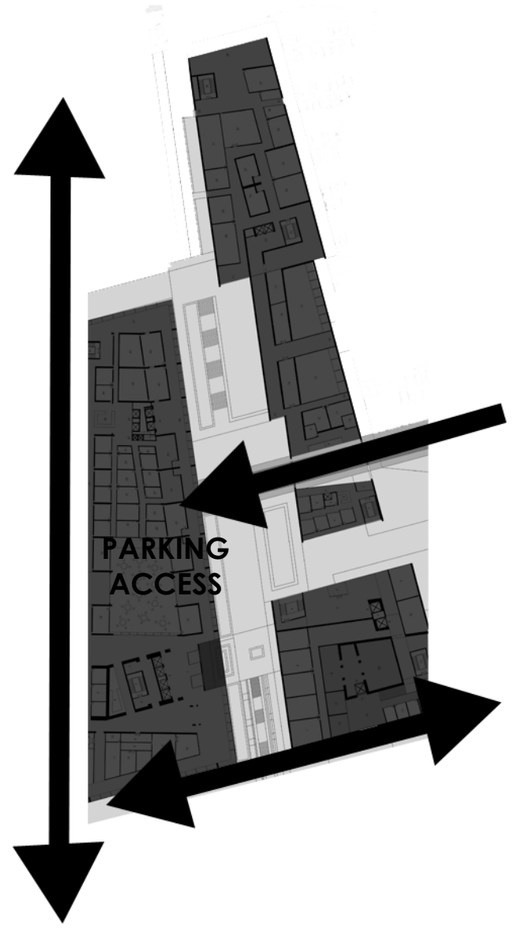
THE “PEDESTRIAN AVENUE”



BUILDING ENTRY NODES

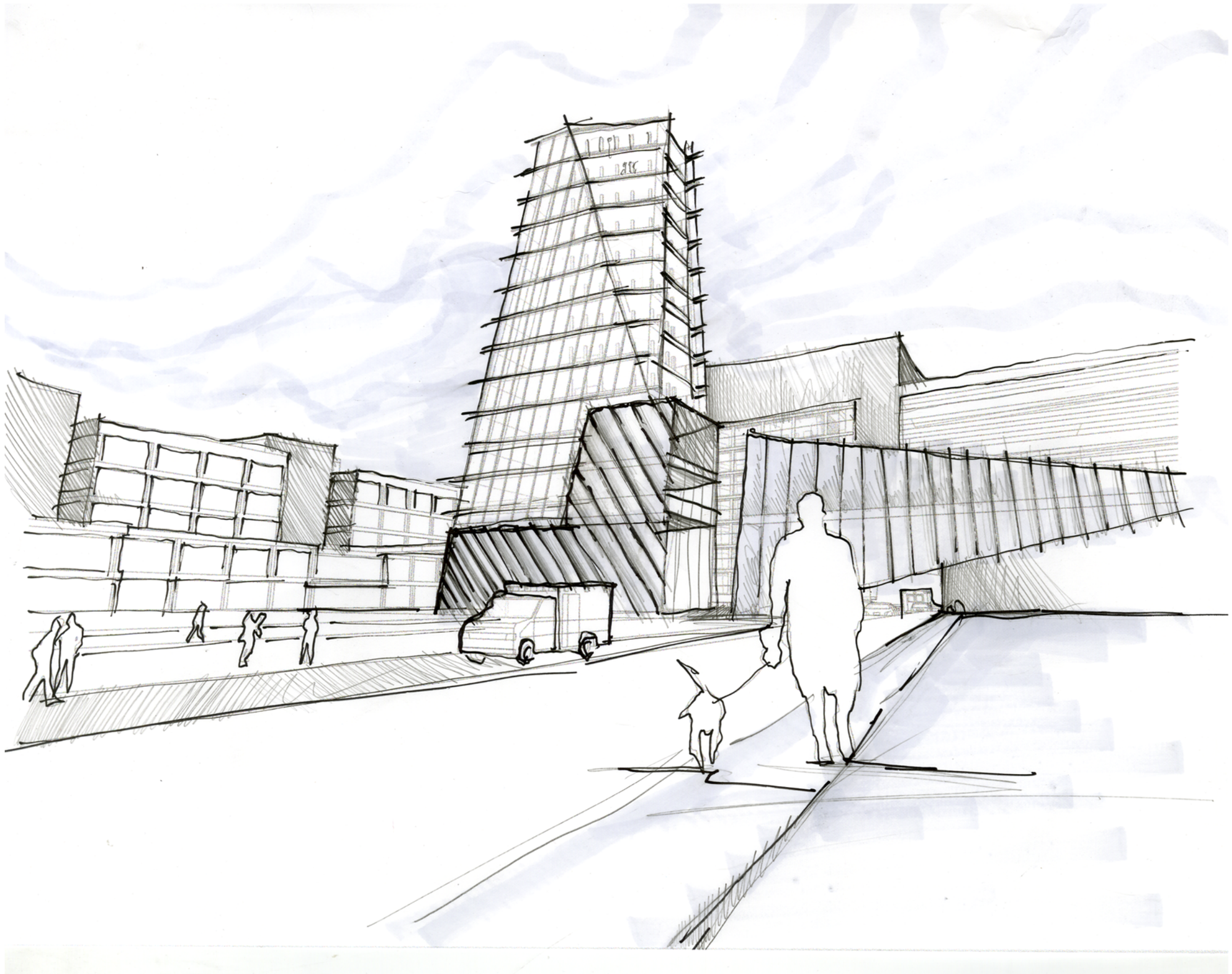


PEDESTRIAN ENTRY NODES



VEHICULAR TRAFFIC

THE “PEDESTRIAN AVENUE” PLAN

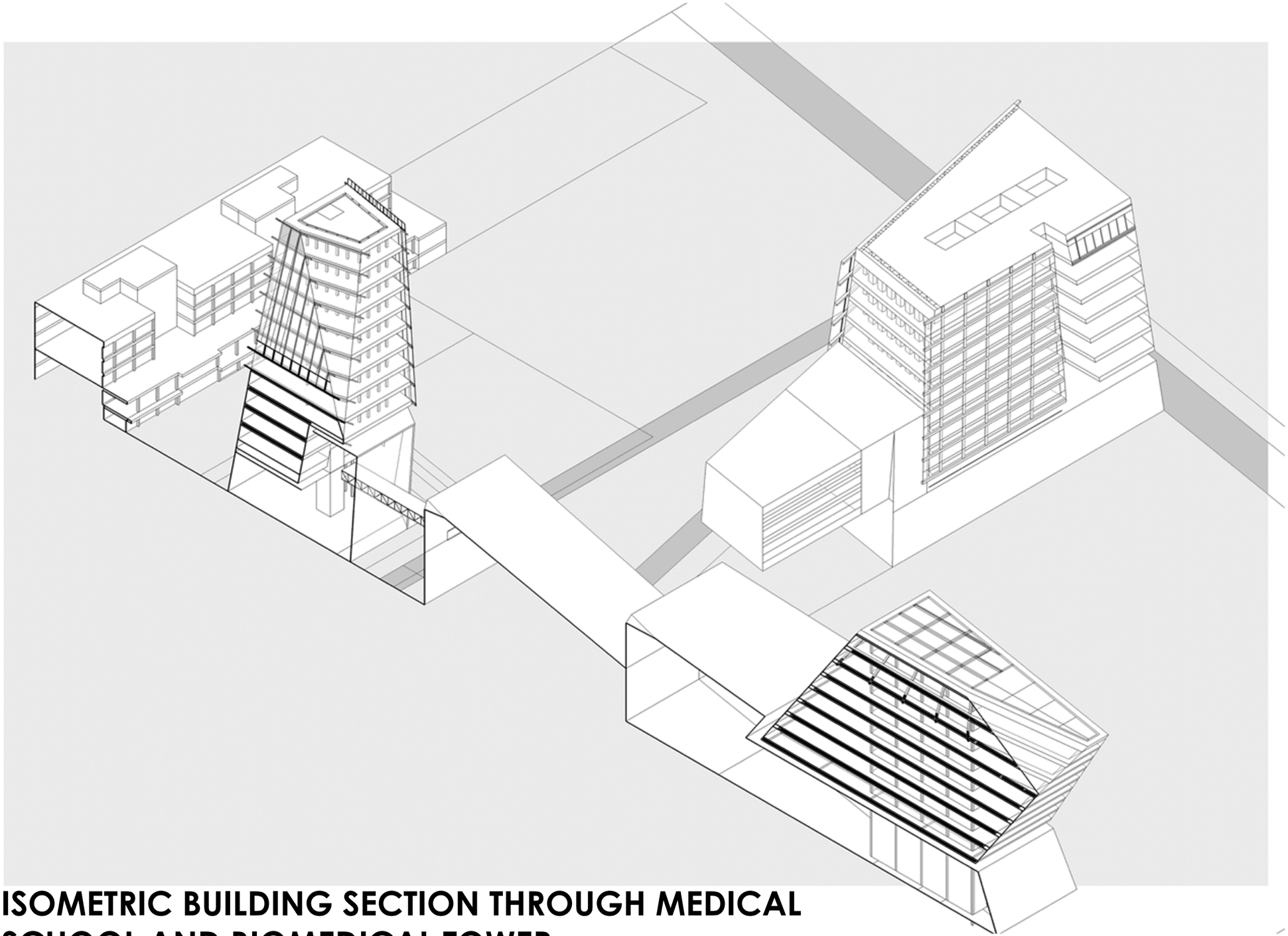


THE PROGRAM

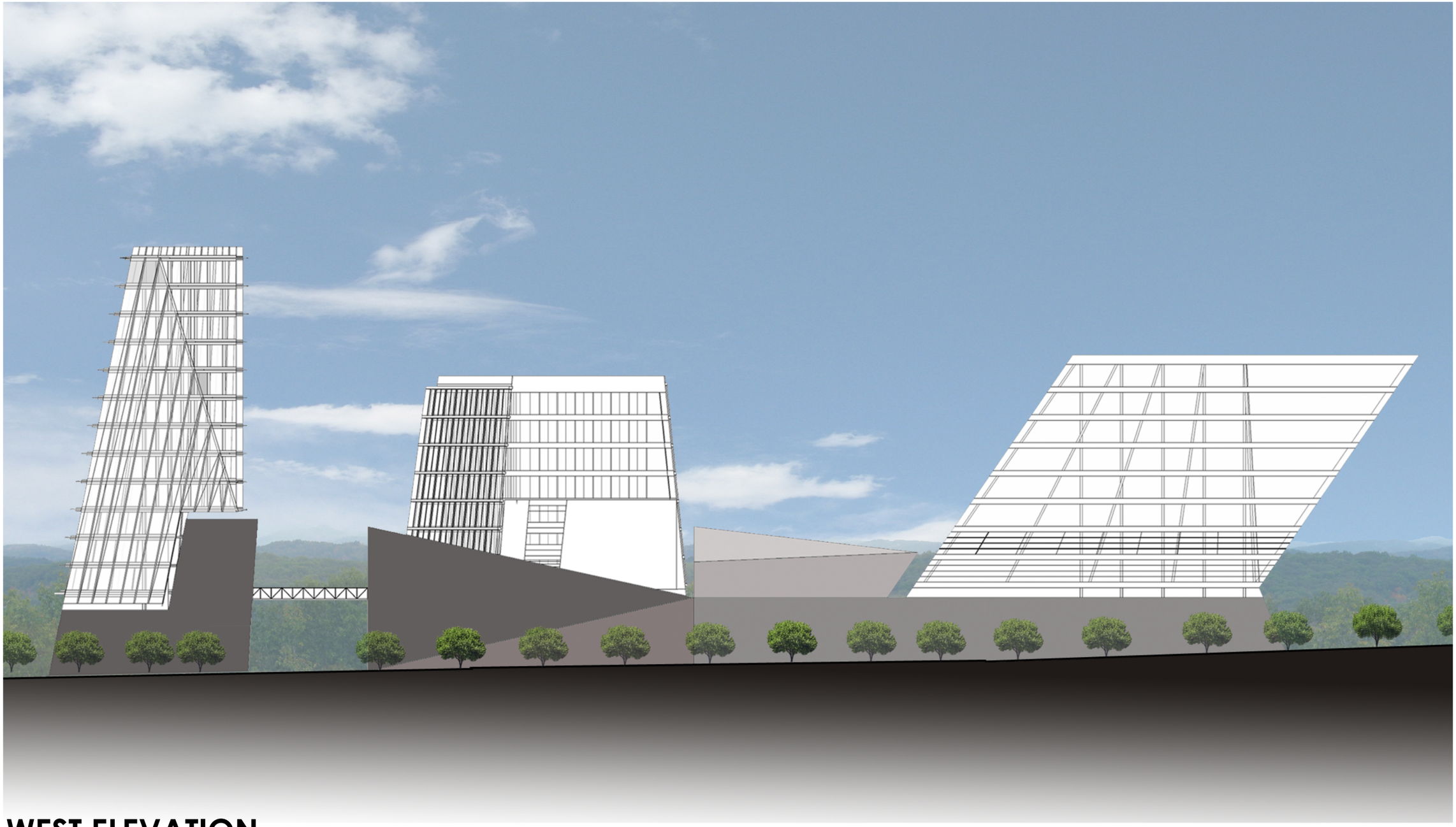
This project was indeed started as a traditional proposal to develop a medical center on campus before it became a case study on creating an Urban Precinct. Therefore in order to realize this, I felt it was absolutely imperative that I push the proposal beyond the conceptual level and into the schematic level.

As soon as I developed a solution to the urban complexity of this project and developed the architecture even further, I felt it would be much more appropriate to begin to look at the program though a series of sketches and then drawings that were much more formal. So from the sketches, I felt comfortable enough to begin to develop the plans even further.

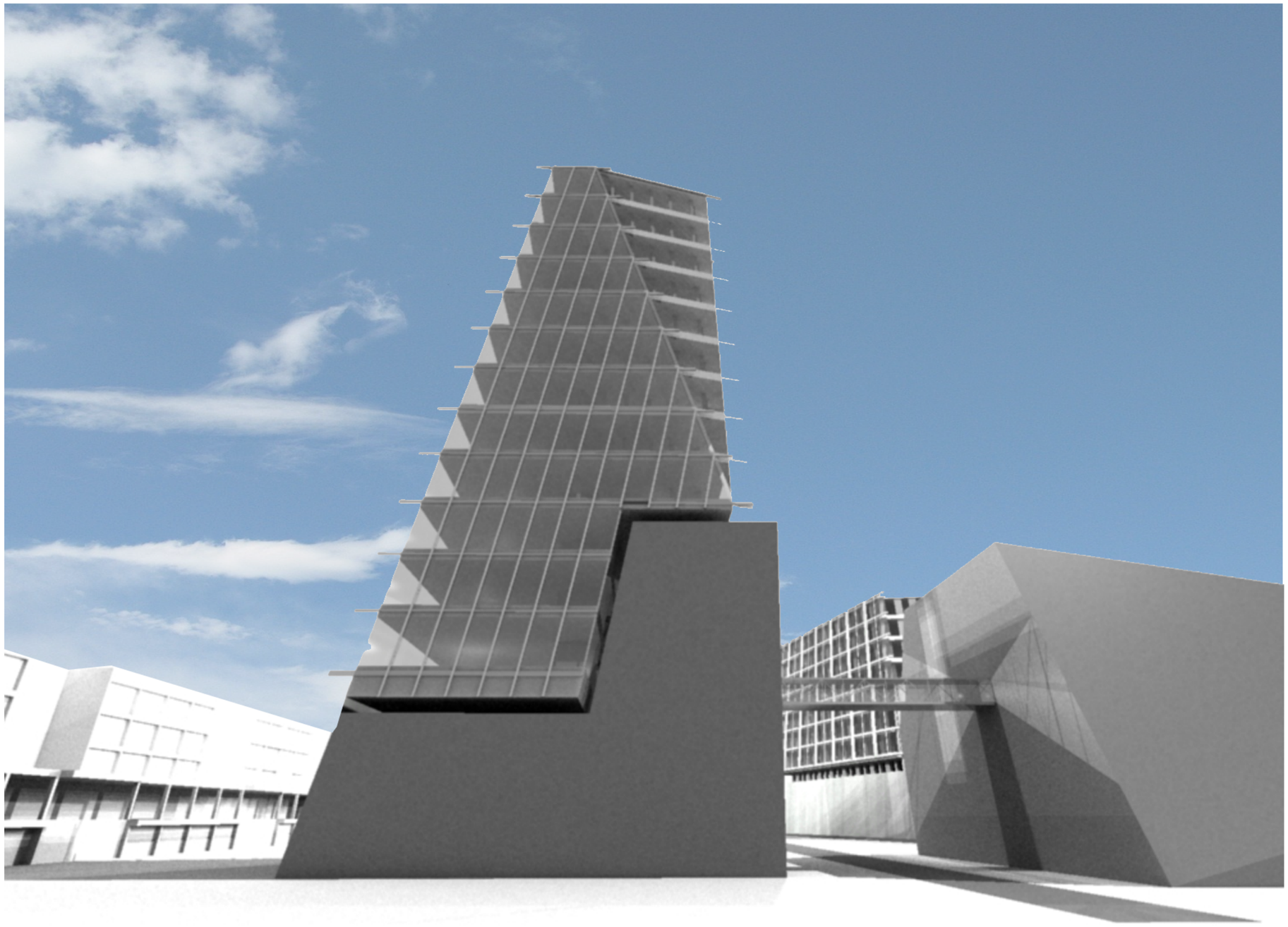
As mentioned earlier, I had already come into this project knowing the function of each building I proposed. There is a medical school that will house programs such as Nursing, Dentistry, Medicine, and Pharmacy. The Western building will house the actual in-patient and out-patient Medical Center. And lastly, the landmark of the project and invariable of the cam pus is the Biomedical Research Tower. It will house faculty offices, graduate student office suites, classrooms, and laboratory space. The unique aspect is that the plans "radiate." For example, on the medical tower, the hospital rooms are situated all around the perimeter so as it give the patients more exposure to the outside scenery. On the inter-side are places such as laboratories and support spaces and they radiate from the core spaces. Each of the other towers convey the same expression as seen on the plans.



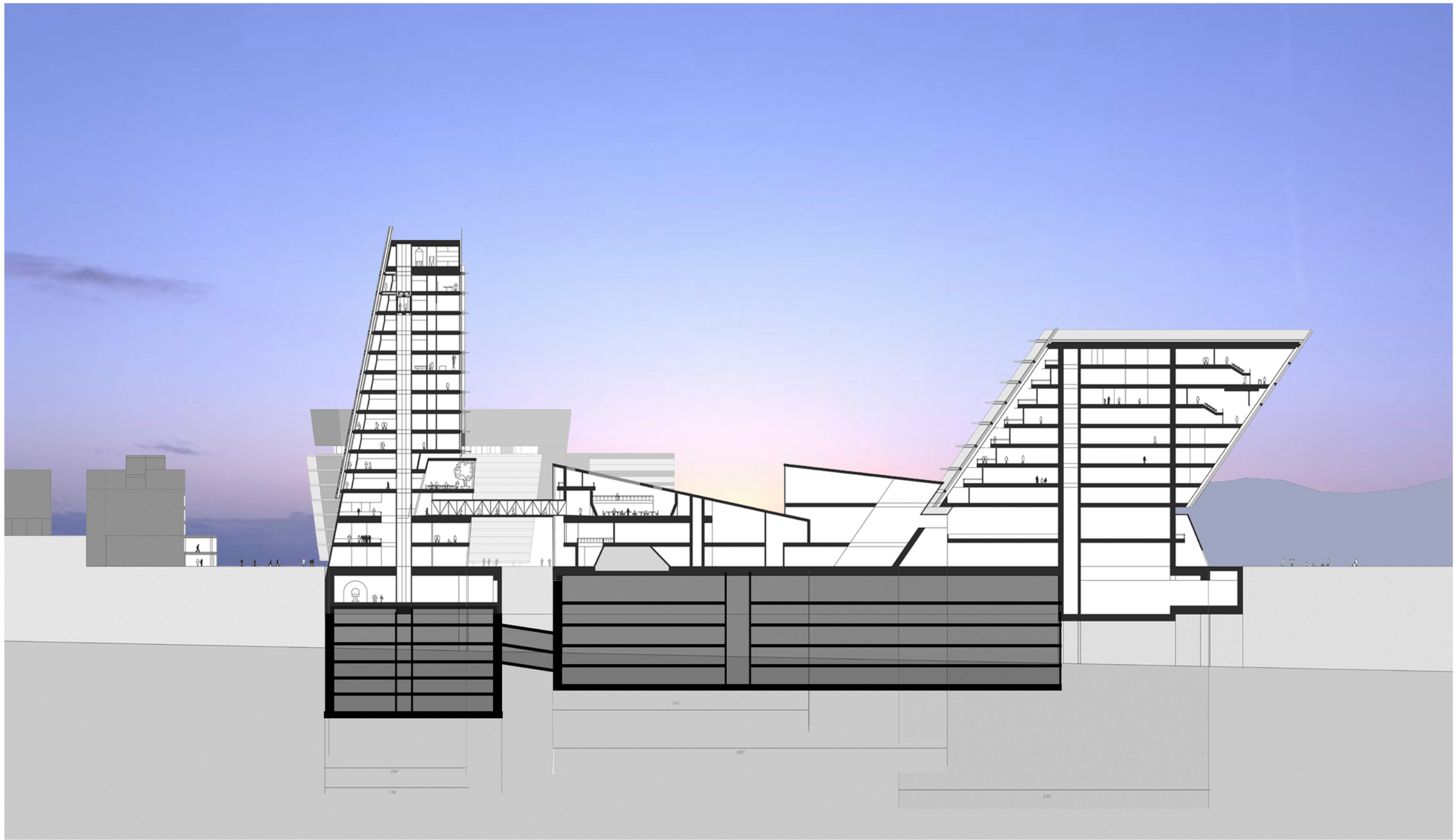
ISOMETRIC BUILDING SECTION THROUGH MEDICAL SCHOOL AND BIOMEDICAL TOWER



WEST ELEVATION



BIOMEDICAL RESEARCH TOWER PERSPECTIVE FROM W. CAMPUS DRIVE



BUILDING SECTION

PLAN: GROUND LEVEL

MEDICAL CENTER LEGEND
AMBULATORY WING

1. *STORAGE HAZ-MAT AREA*
2. *MAGNETIC RESONANCE IMAGING (MRI) A*
3. *SCANNER CONTROL ROOM*
4. *PATIENT PREP ROOM.*
5. *MRI B/ POSITRON EMISSION TOMOGRAPHY (PET)*
6. *COMPUTER CLOSET STORAGE*
7. *STAIR A*
8. *OUT-PATIENT WAITING ROOM*
9. *MAIN PUBLIC ELEVATORS*
10. *MAIN RECEPTION LOBBY A*
11. *STAIR B*
12. *VENDING ROOM*
13. *PUBLIC PHONE ROOM*
14. *RECEPTION DESK B*
15. *CONSULTATION ROOM A*
16. *EXHIBIT AREA, LEARNING CENTER*

IN-PATIENT WING

17. *IN-PATIENT REGISTRATION*
18. *ADMINISTRATIVE OFFICE A*
19. *INSURANCE-CLAIMS OFFICE*
20. *FACULTY OFFICE A*
21. *ADMINISTRATIVE OFFICE B*
22. *FACULTY LOUNGE*
23. *CONFERENCE ROOM*
24. *FACULTY OFFICE B*
25. *FACULTY OFFICE C*
26. *TREATMENT ROOM A*
27. *OPERATING ROOM A*
28. *OPERATING ROOM B*
29. *PATIENT LABORATORY*
30. *O.R. SUPPLY A*
31. *O.R. SUPPLY B*
32. *MEDICAL SUPPLY ROOM A.*
33. *STAT. NURSE OFFICE*
34. *CENTRAL NURSE STATION*
35. *MEDICAL SUPPLY ROOM B.*
36. *ON-CALL FACULTY OFFICE*
37. *X-RAY/RADIOLOGY/CT*
38. *PULMONARY FUNCTION LAB*
39. *VASCULAR LAB*
40. *OPERATING ROOM C.*
41. *OPERATING ROOM D*
42. *PRIVATE ELEVATORS*
43. *PUBLIC ELEVATOR B*
44. *MENS PUBLIC RESTROOM*
45. *WOMENS PUBLIC RESTROOM*
46. *MECHANICAL FUNCTION ROOM*
47. *SUPPORT AREA*
48. *MECHANICAL ROOMS*
49. *SUPPORT AREA/EXPANSION AREA*
50. *OPEN AITING AREA A*
51. *SURGICAL RECOVERY ROOM*
52. *DRESSING ROOM/BATHROOM*
53. *STAIR C*
54. *IN-PATIENT RECOVERY/ANESTHESIA RECOVERY ROOMS*
55. *ICU*
56. *STEP DOWN UNIT*
57. *OPEN WAITING AREA B.*

BIOMEDICAL RESEARCH TOWER

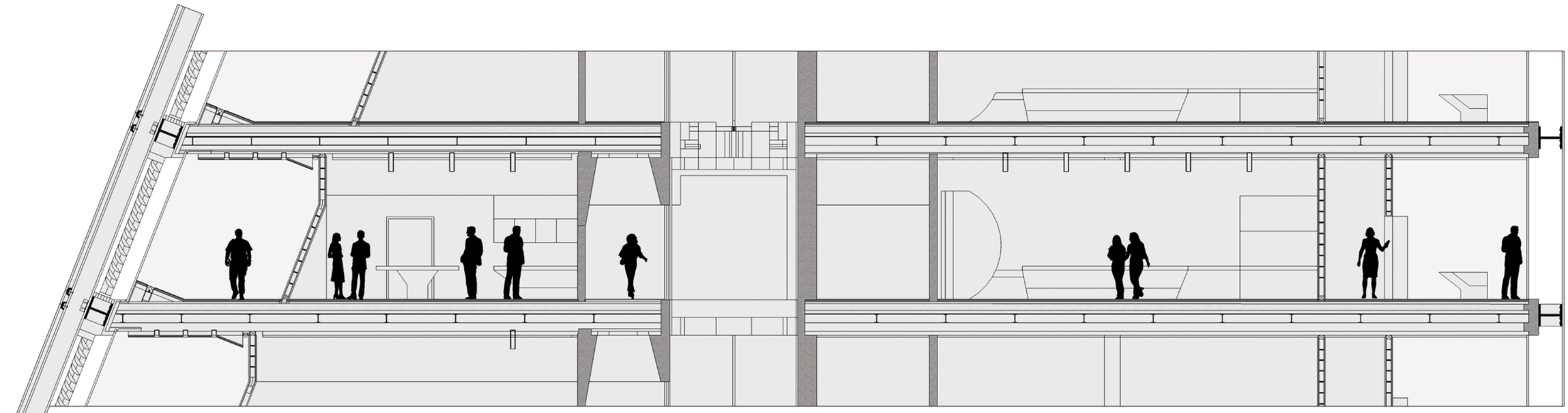
1. *FACULTY OFFICE CORRIDOR A*
2. *CLASSROOM*
3. *ADMINISTRATIVE OFFICE*
4. *STAIR A*
5. *FACULTY OFFICE CORRIDOR B*
6. *ELEVATOR A*
7. *RESEARCH LABORATORY*
8. *ELEVATOR B*
9. *MECHANICAL/CUSTODIAL CLOSET*
10. *STAIR B.*
11. *CONFERENCE ROOM*
12. *MECHANICAL/ELECTRICAL ROOM*
13. *OPEN FACULTY LOUNGE AREA*

COLLEGE OF MEDICINE TOWER

1. *ELEVATOR A*
2. *STAIR A*
3. *RECEPTION/INFORMATION DESK*
4. *OPEN FACULTY OFFICES*
5. *ORAL SURGERY/DENTISTRY ROOMS*
6. *WOMENS RESTROOM*
7. *MENS RESTROOM*
8. *ADMINISTRATIVE OFFICE*
9. *STUDENT COMPUTING LAB*
10. *DENTAL HYGIENE AREA GENERAL DENTAL CARE AREA*
11. *STAIR B.*
12. *ORTHODONTICS*
13. *DENTISTRY DEPARTMENT LECTURE HALL*
14. *MECHANICAL/CUSTODIAL*
15. *STUDY AREA*

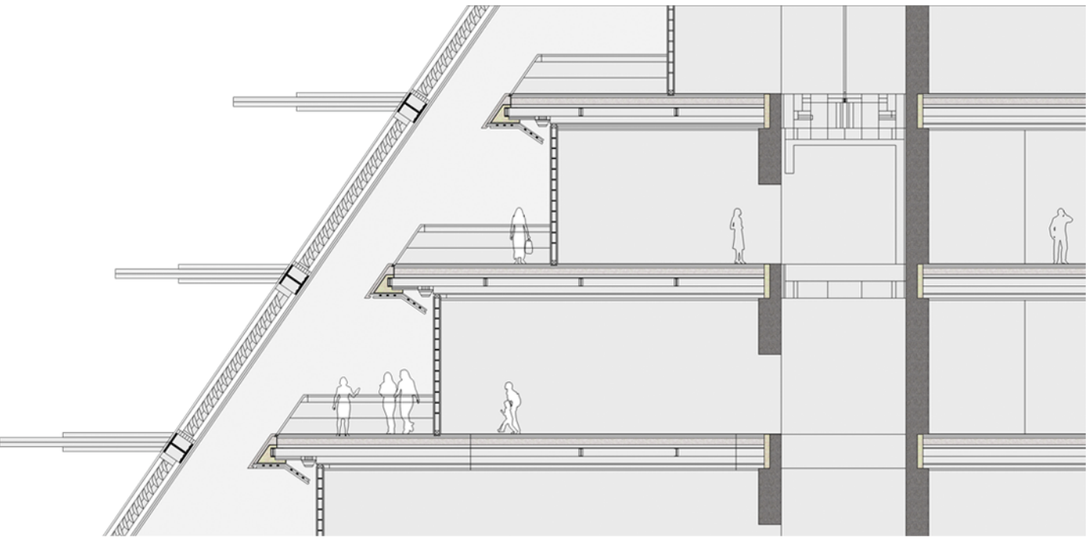
PLAN: TYPICAL LEVEL

PLAN - 5TH FLOOR IN ITS ENTIRETY (ALL BUILDINGS ON SITE)

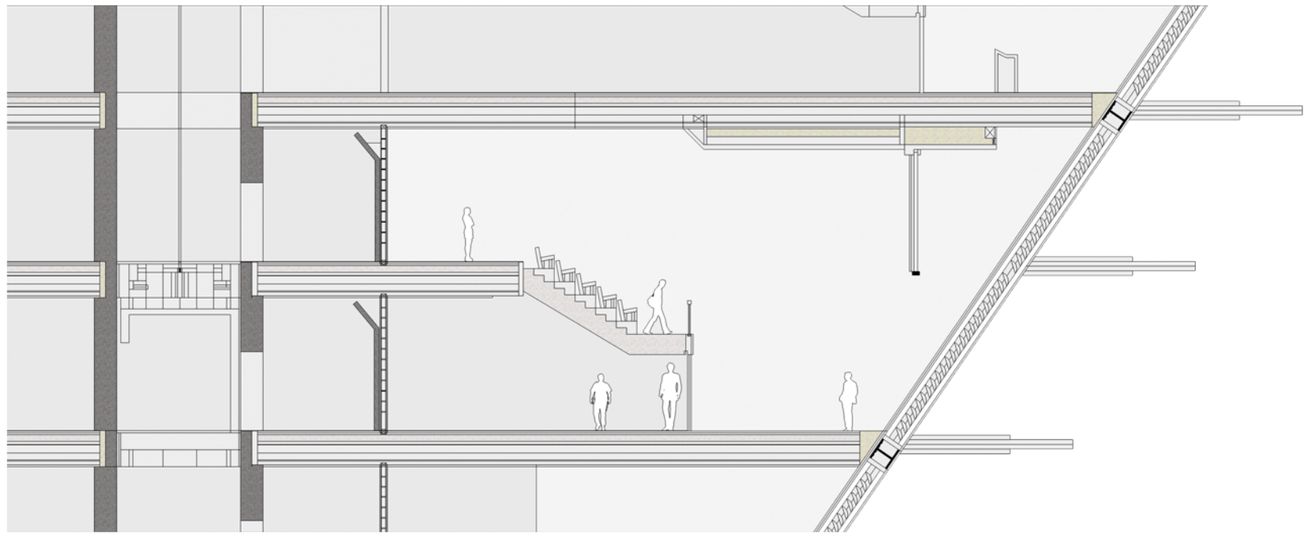


Wall Section - Biomedical Tower - East - Typical:

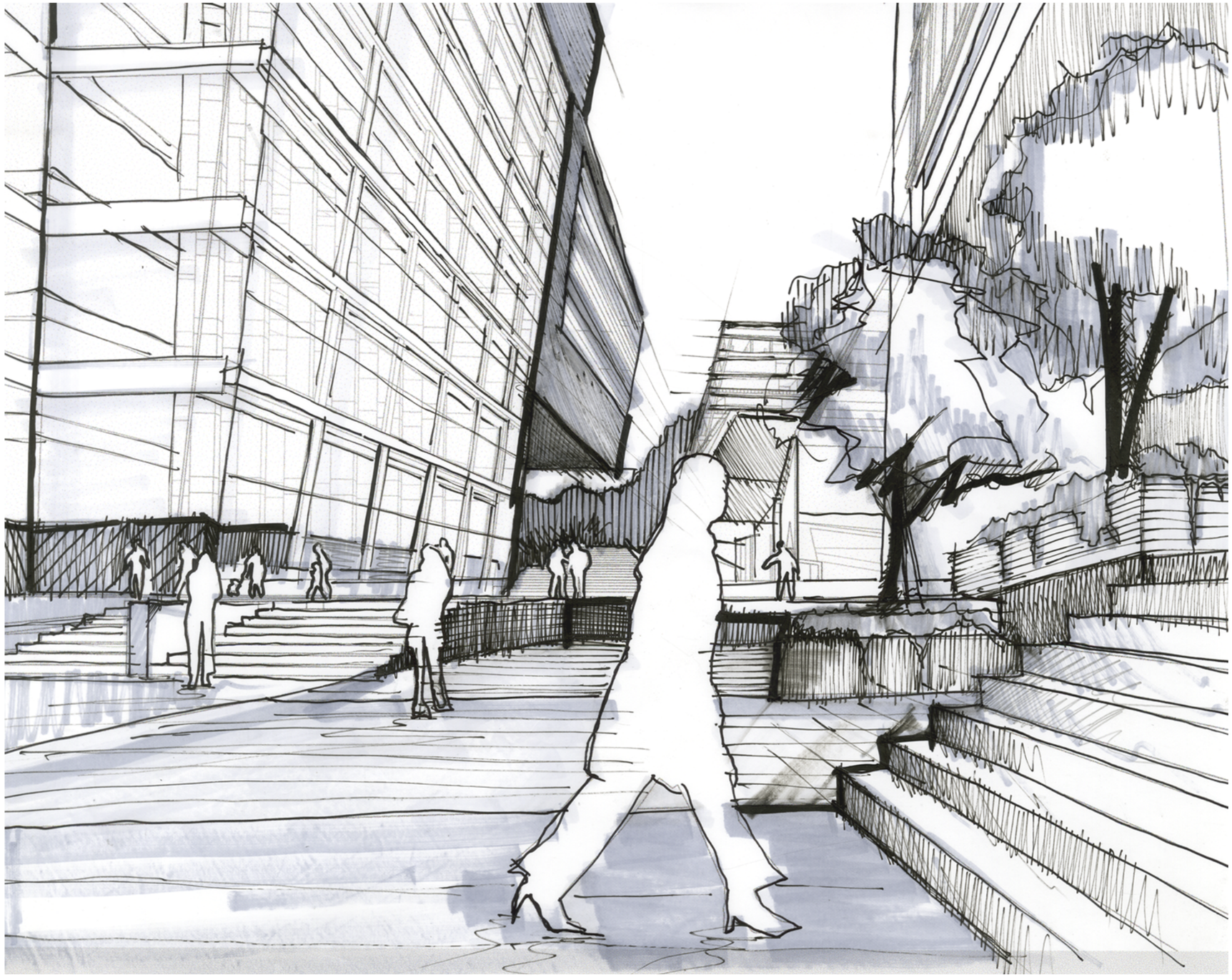
SECTION DETAILS

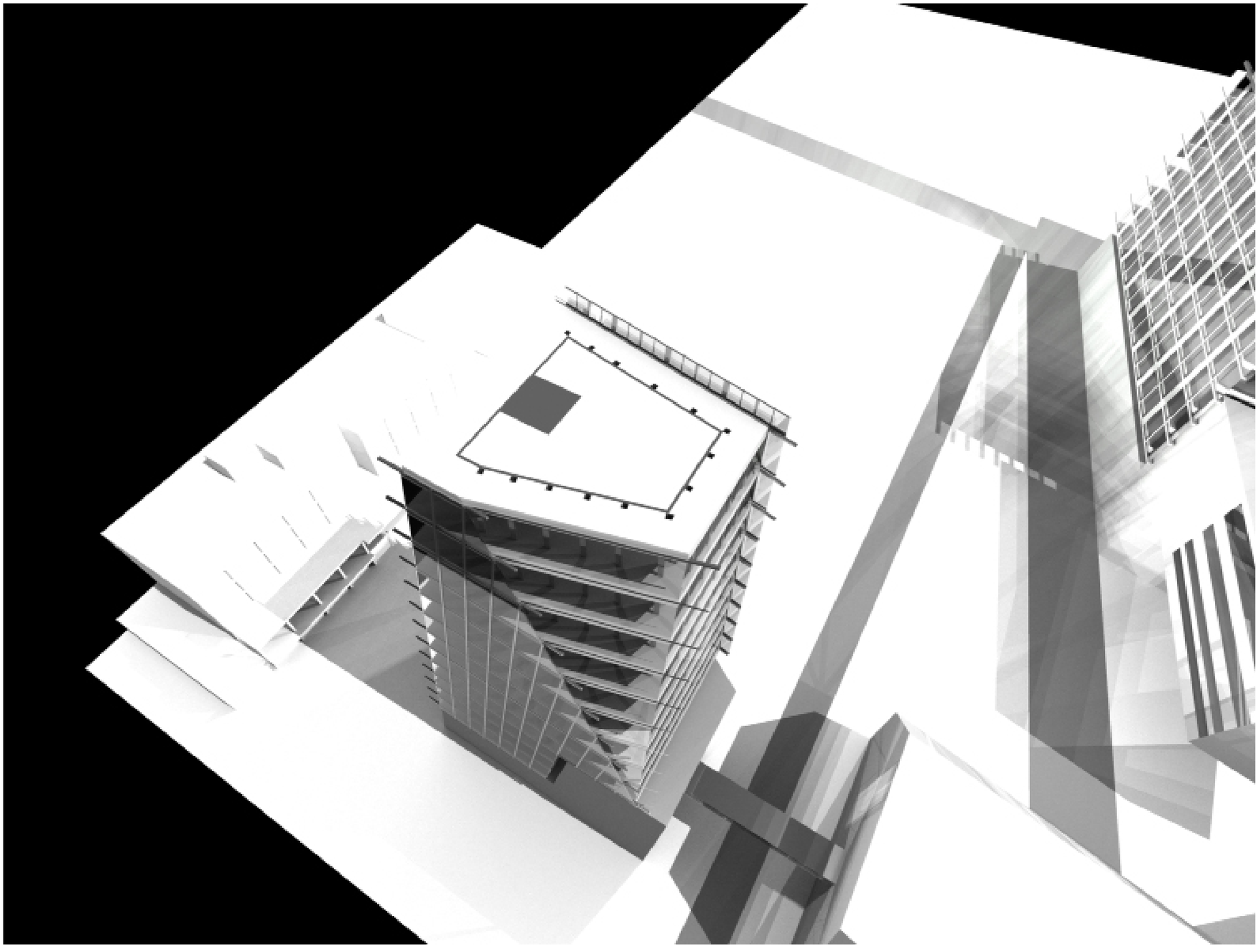


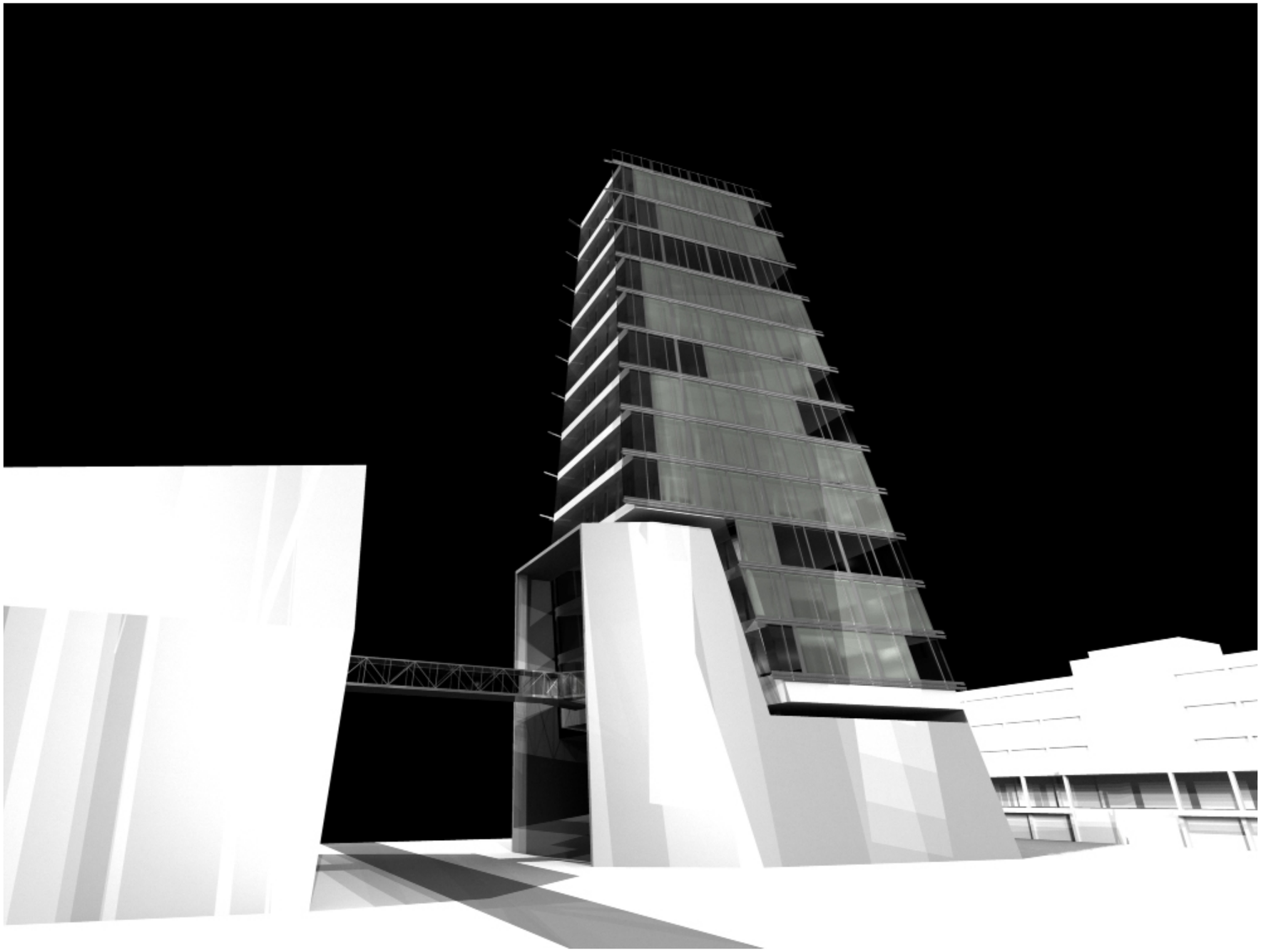
Wall Section - Medical School Tower - West

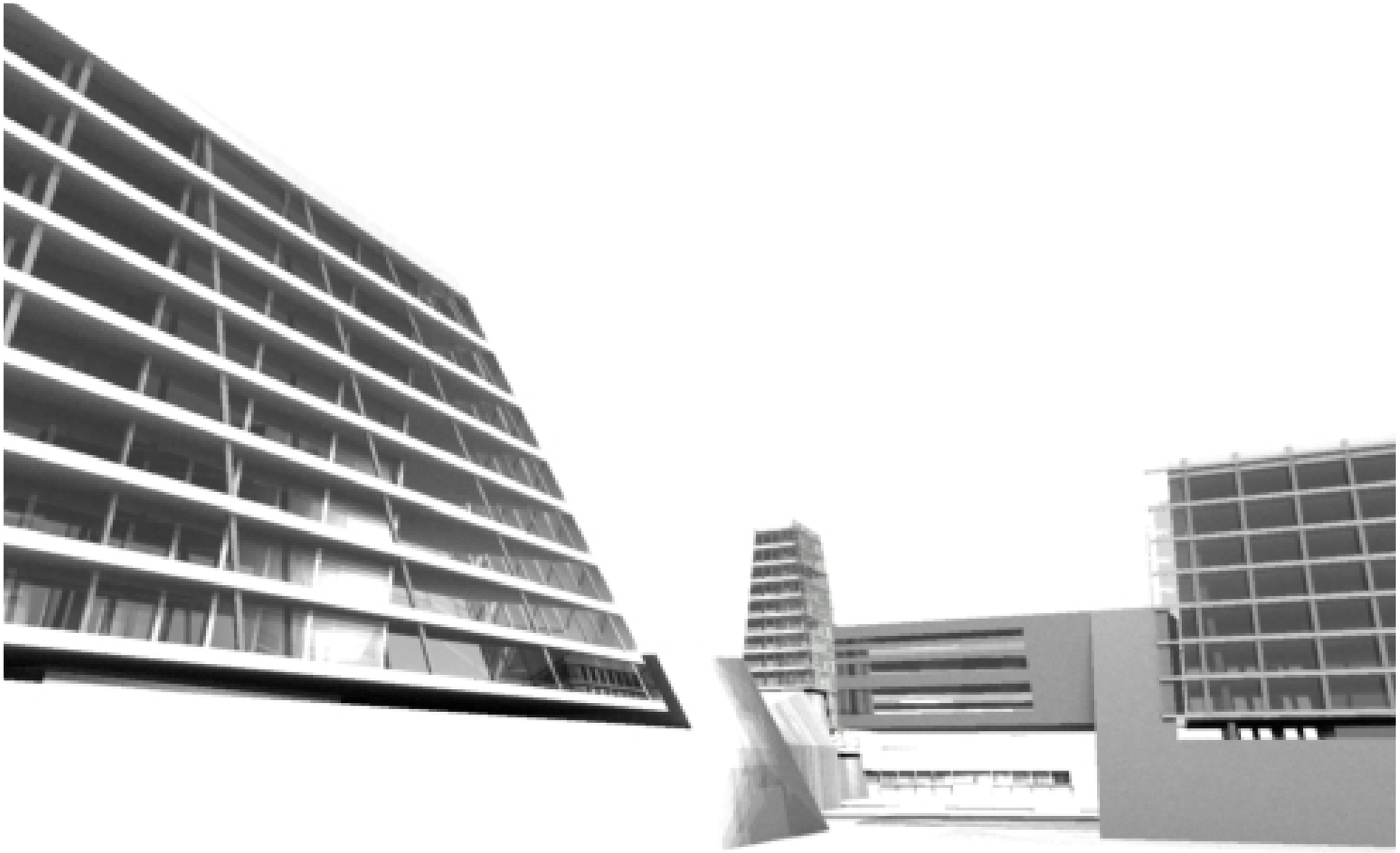


Wall Section - Medical School Tower - East









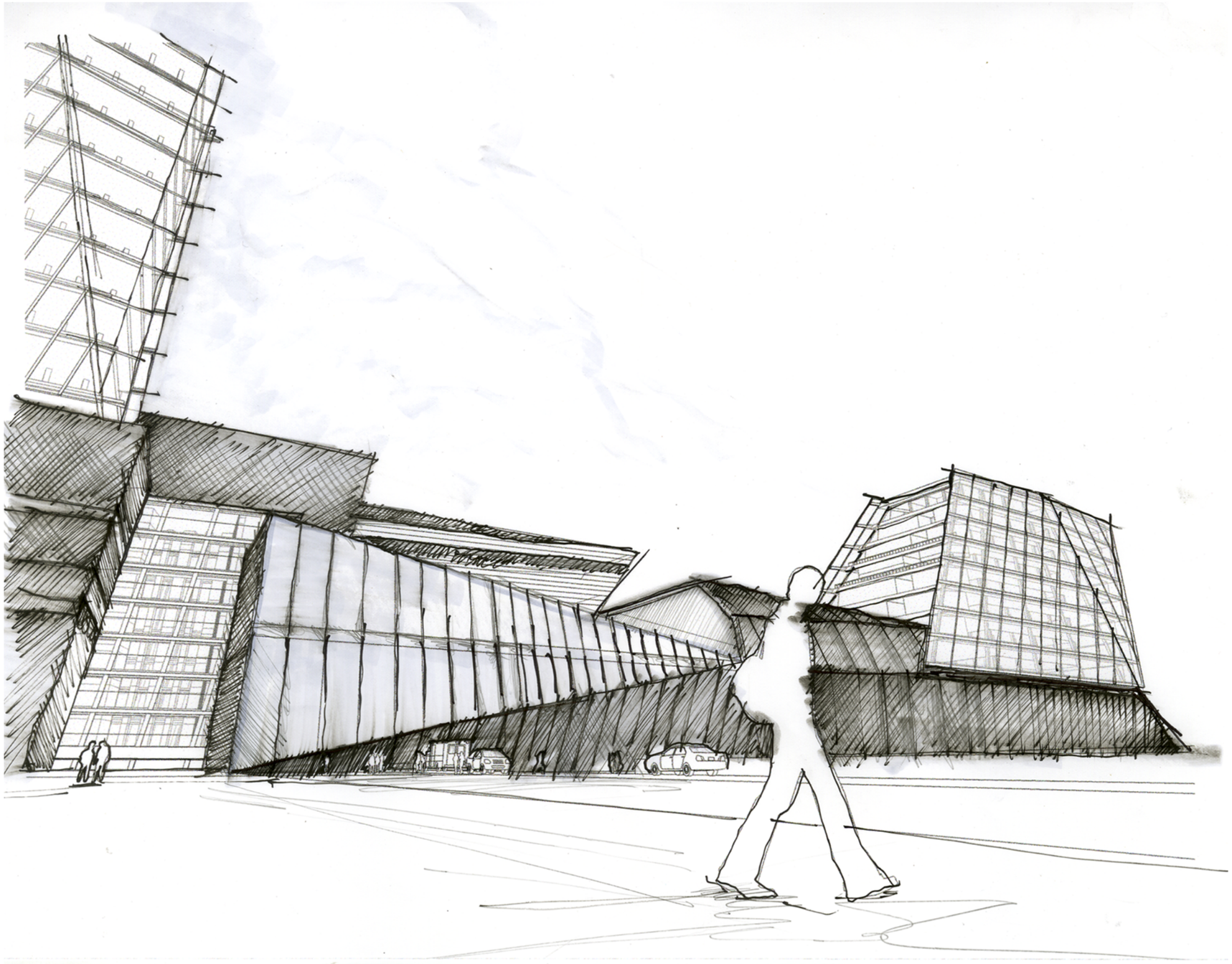
NEW SANCTUARIES

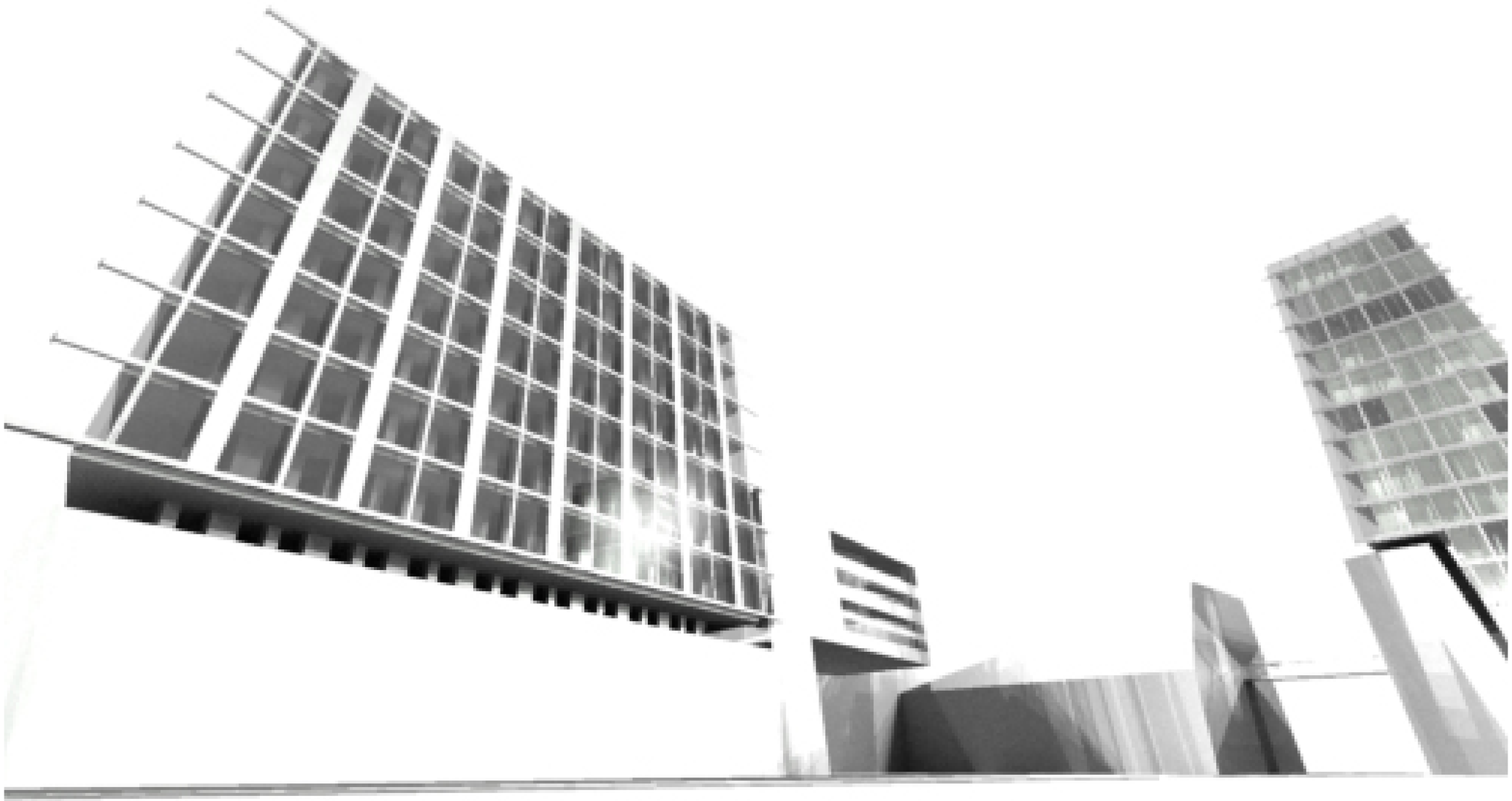
sanc ·tu ·ar ·y - A place of refuge or asylum.

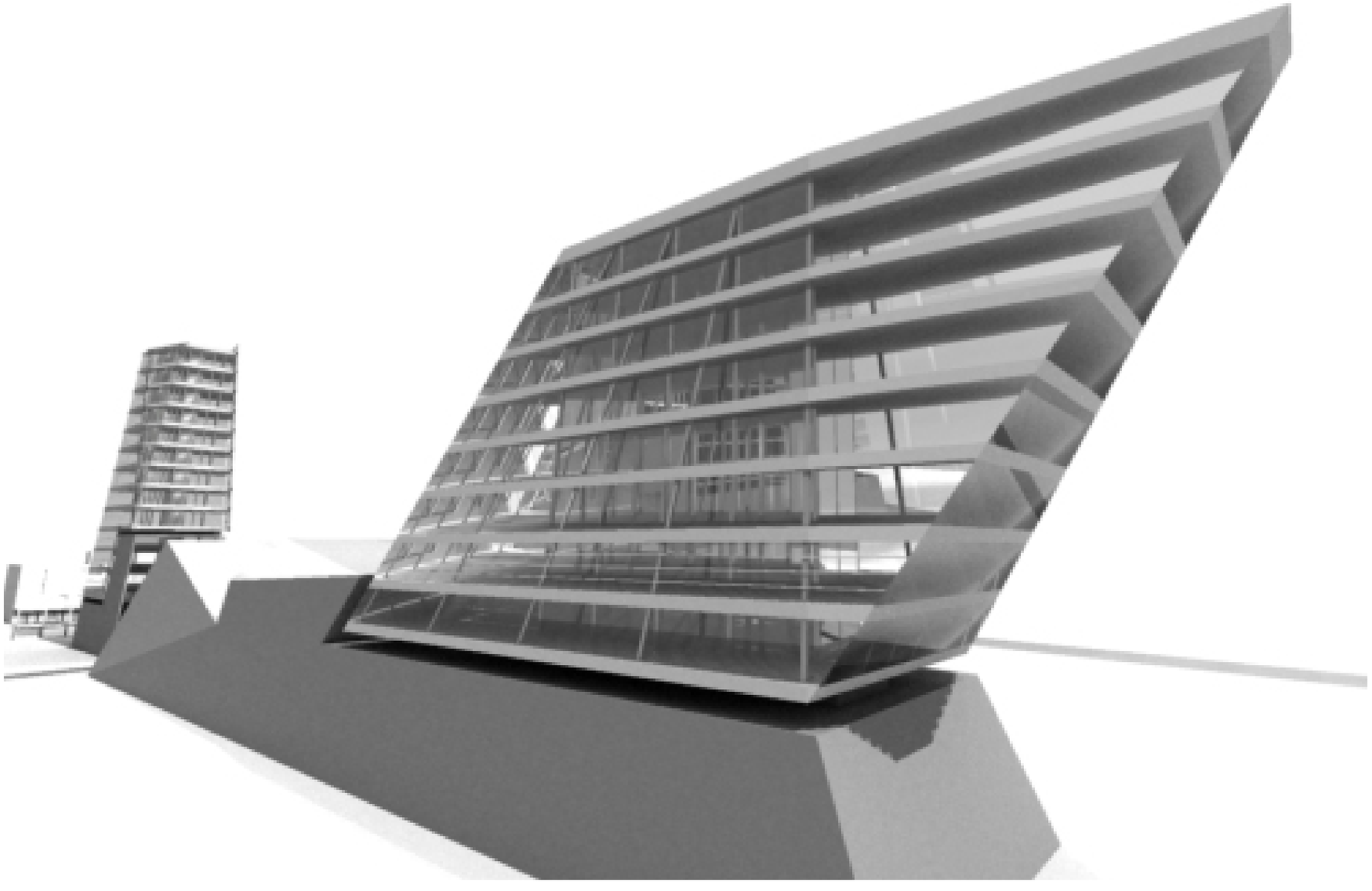
Thus with the creation of an Urban Precinct at Virginia Tech, there came a point where this project could be divided into two 'sanctuaries' which is something that I found to be a pleasant surprise. The first sanctuary goes along with what was discussed throughout this thesis and that was an Urban Sanctuary - it is a place like no other on campus where people can seek a sort of "refuge" from a perceived sense of tedium of the rest of the campus. It will be a place that is constantly in motion and relentless in its sense of change. The idea of change reflects the everchanging environment of research. the idea of 'change' also reflects the dy

The second sanctuary that is created is within the volumes themselves and that is key to the design and development of any medical center project like this one - and this to give the patients a sense of sanctuary from within -- that they are being showered with care and being "sheltered" from the possible threat

that something is wrong with their health. This can be described as a "Sky Sanctuary" as it pertains to the idea that once past the "urban sanctuary" they are back within the principle beauty of Blacksburg and the surrounding region - with accessible views to every part of its serenity. The Urban Precinct in turn serves almost as an "intermediary vessel" between the campus and community itself. And this is a concept that I came across and became comfortable with as an idea of "tranquility" for patients speaking healthcare.







CONCLUSION

The question I needed to ask myself when concluding this project was: "Have I created an Urban Precinct?" Whether or not I did by the standard academic meanings of the words 'Precinct' or 'Urban', I did accomplish what this Thesis intended. It is a space that defies traditional campus planning, it is a unique space on campus, and it does exactly what my thesis intended - and that was to create a medical center on the campus of Virginia Tech, and to arrange it in a way that introduced an urban expression on campus. Thus I feel that this project was successful. Although there were changes in layout and procedure along the way, the ideas and intent stayed consistent throughout the process in that there was no change in building design - only the natural development of the project as one can expect. More importantly, there was no change to the intent of creating an Urban feeling to the project - the idea stayed and it simply evolved to enhance the entire experience of the medical center. A beautiful new Pedestrian Avenue was also created as result of the modified building layout, and along the way there was a more pleasant feeling where the towers themselves acted as sanctuaries for patients and students where the dynamic architecture provided beautiful views of the mountains and the natural landscape of Virginia Tech. It was a pleasant juxtaposition to the urbane study of my Thesis. But in the end the Urban Precinct was a successful ambition to bring a new college to the Blacksburg Campus of Virginia Tech and express the technologically advanced nature of the university.

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TO MY FAMILY

My Mother, Raja H. Khalil: Without your guidance and amazing attitude in life, I could have never realized this dream. I love you.

My Father, Dr. Mohamad A Khalil: For your patience with me, your outlook in life, your unparalleled intellect and intelligence, and unwavering support. You are the single greatest influence of my life. I love you.

My Sister, Shayma Khalil: You are without a doubt my best friend in the world, and my biggest supporter. I am the luckiest person in the world to have you. I love you.

TO MY RELATIVES

This book is also dedicated to my relatives in Iraq. You have persevered through one of the greatest human tragedies in history. Your bravery, your resilience, and your continued vigilance is something people will admire throughout history. I love you all and God Bless all of you.

TO ALL OF MY FRIENDS IN LIFE

A very special thanks to all of my wonderful and supportive friends throughout life. I have met some of the greatest people on Earth and I am lucky to have met each and every one of you.