

# FOSTERING RESPONSIBLE BEHAVIOR

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# FOSTERING RESPONSIBLE BEHAVIOR

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# THESIS ABSTRACT

EDUCATED CHILDREN MUST COMPREHEND WHAT THEIR DUTIES TOWARDS THE ENVIRONMENT ARE AND START FOSTERING RESPONSIBLE BEHAVIOR SERIOUSLY. IF CHILDREN GO TO SCHOOL WITH MEANS TO LEARN SCIENCE, LITERATURE... ETC THEY MIGHT AS WELL EXTEND THEIR DISCIPLINE TO HOW TO USE THIS KNOWLEDGE CAREFULLY; WHEN WE NEED IT VS. WHEN WE WANT IT.

THIS THESIS DISCUSSES FOSTERING RESPONSIBLE BEHAVIOR IN CHILDREN AT SCHOOL. WHAT HUMANS OUGHT TO BE AWARE OF WHILST USING BUILDINGS AS FUNCTIONAL ELEMENTS AS WELL AS SUSTAINABLE ELEMENTS.

THE DESIGN OF THE SCHOOL WILL TEND TO AROUSE AWARENESS TOWARDS THE ENVIRONMENT AND REINFORCE RESPONSIBLE BEHAVIOR IN CHILDREN.

## KEYWORDS

SUSTAINABILITY, RESPONSIBILITY, LIGHT CONSERVATION, ENERGY CONSERVATION, VERNACULAR, ENVIRONMENT FRIENDLY, RESPONSIBLE BEHAVIOUR.





PROBLEM  
—STATEMENT—



# PROBLEM —STATEMENT—

HOW CAN ARCHITECTURAL DESIGN CREATE SPACES CONDUCIVE  
TO RESPONSIBLE BEHAVIOR LEARNING FOR ELEMENTARY SCHOOL  
CHILDREN IN KUWAIT.



# STATEMENT OF INTENT

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# STATEMENT OF INTENT

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## TPOLOGY

THE TYPOLOGY OF THIS THESIS PROJECT IS A SCHOOL BUILDING FOR ELEMENTARY SCHOOL STUDENTS.

## CLAIM

ARCHITECTURE PLAYS A MAJOR ROLE IN AWARENESS AND RESPONSIBILITY TOWARDS THE ENVIRONMENT. ARCHITECTURE CAN ESPECIALLY PLAY A MAJOR ROLE IN STUDENTS' INFLUENCE IN RESPONSIBLE BEHAVIOR.

## PREMISES

ACTOR:

SCHOOL BUILDING/S

ACTION:

A DESIGN THAT ENGAGES STUDENTS IN UNDERSTANDING THEIR IMPACT ON THE ENVIRONMENT.

OBJECT:

ELEMENTARY STUDENTS

HOW IS THE ACTOR RELATED TO THE CLAIM?

ARCHITECTURE HAS CONTRIBUTED TO HUMAN'S COMFORT; HOWEVER, IT SHOULD TAKE OVER RESPONSIBILITY TOWARDS THE ENVIRONMENT.





# STATEMENT OF INTENT

HOW IS THE ACTION RELATED TO THE CLAIM?

ARCHITECTURE DEALS WITH BEAUTY AND FUNCTIONALITY. RESPONSIBILITY IS NO LESS IMPORTANCE TO BE ENFORCED WITH THE BUILDING FUNCTIONALITY AND AESTHETICS.

HOW IS THE OBJECT RELATED TO THE CLAIM?

STUDENTS WILL BE IMPACTED BY THE BUILDING DESIGN AND WILL BECOME MORE ENVIRONMENTALLY AWARE.

## SUPPORTING PREMISES

A STUDY DONE BY BEHAVIORAL RESEARCHERS IN THE FIELD OF ENVIRONMENTAL PSYCHOLOGY HAVE POINTED OUT “ THE IMPORTANCE OF THE MAN-MADE ENVIRONMENT IN INFLUENCING PEOPLE’S BEHAVIOR, PERCEPTIONS, AND EMOTIONAL STATES.” (ENVIRONMENT AND BEHAVIOR, JULY 1984)



# STATEMENT OF INTENT

## THEORETICAL PREMISES

STUDENTS GO TO SCHOOL WITH THE INTENTION TO LEARN. RESPONSIBILITY TOWARDS THE ENVIRONMENT SHOULD BE ONE MORE THING THAT THEY SHOULD TAKE HOME WITH THEM THROUGH ARCHITECTURE.

## PROJECT JUSTIFICATION

STUDENTS MUST INCORPORATE RESPONSIBILITY TOWARDS THEIR ENVIRONMENT TOGETHER WITH THEIR EDUCATION SUCH AS LITERATURE, SCIENCE, HUMANITIES... ETC. STUDENTS MUST KNOW THAT WE SHOULD NOT TAKE TECHNOLOGY FOR GRANTED AND WE ALSO SHOULD BENEFIT FROM IT WITHOUT MAKING HARM TO ANY OTHER SPECIES LIVING WITH US ON THIS PLANET AS WELL AS TO THE PLANET ITSELF. IF ARCHITECTURE WAS KNOWN AS THE SCIENCE TO BUILD IT SHOULD ALSO BE KNOWN AS THE SCIENCE TO RETURN WHAT WAS TAKEN AWAY FROM EARTH.



# THE PROPOSAL



# — THE NARRATIVE —

EDUCATION IS THE MOST POWERFUL WEAPON ONE CAN HAVE. PRICELESS, INALIENABLE, THE SOUL OF A SOCIETY AS IT PASSES FROM ONE TO ANOTHER. GETTING GOOD EDUCATION TAKES A LOT MORE THAN JUST GOOD TEACHERS AND TEXT BOOKS, IT IS AN ENVIRONMENT THAT MAKES STUDENT COMPREHEND, DISCIPLINE, AND INTERACT WITH A SPACE. A SCHOOL NEEDS TO BE DESIGNED TO THE STUDENTS' CONTENTMENT. SOCIETIES DESIGN THEIR OWN SCHOOLS TOGETHER WITH ITS VALUES, NORMS, CULTURE, AND EVEN RELIGION. SOCIETIES RELY ON ARCHITECTURE TO DO THE PLANNING, DESIGNING AND CONSTRUCTING FORM, SPACE AND AMBIENCE THAT REFLECT FUNCTIONAL, TECHNICAL, SOCIAL, ENVIRONMENTAL, AND AESTHETIC CONSIDERATIONS.

KUWAIT IS A DEVELOPING COUNTRY THAT IS CHANGED IN RESPONSE TO DIFFERENT SOCIAL AND CULTURAL FACTORS. IN RESPONSE TO THE HISTORICAL CHANGE IN THE COUNTRY ARCHITECTURE IS MOVING IN THE SAME DIRECTION. STUDENTS IN KUWAIT TODAY ARE ADAPTING TO THE NEW WORLD. SCHOOLS, NEVERTHELESS, TEND TO KEEP UP WITH THE DEVELOPMENT OF THE WORLD TOGETHER WITH SOCIO-CULTURAL ARCHITECTURE. ECONOMY HAS ALSO PLAYED A MAJOR ROLE IN THE ARCHITECTURE OF THE COUNTRY. KUWAITI ARCHITECTURE IS A STYLE OF ARCHITECTURE UNIQUE TO KUWAIT. KUWAIT WAS A RELATIVELY POOR COUNTRY WITH AN ECONOMY RELIANT ON DECLINING TRADE AND PEARL DIVING. THE ECONOMY WAS TRANSFORMED BY THE DISCOVERY OF OIL, ENABLING UNPRECEDENTED ECONOMIC GROWTH. LITTLE HAS SURVIVED OF OLD KUWAITI ARCHITECTURE DUE TO THE HIGH SPEED OF DEVELOPMENT.





# PROJECT USER/CLIENT — DESCRIPTION

THE MINISTRY OF EDUCATION IS RESPONSIBLE FOR THE DEVELOPMENT OF SCHOOLS IN KUWAIT. THE MINISTRY DISTRIBUTES SCHOOLS ACROSS THE COUNTRY BASED ON THE POPULATION OF EACH AREA AND LOCATION. THE MINISTRY ENSURES EACH AREA A VALID NUMBER OF SPACES FOR ITS STUDENTS AND CORRELATES WITH THE TRANSPORTATION AND STREETS FACTORS. SCHOOLS IN KUWAIT ARE GENDER SPECIFIC, BOYS HAVE THEIR OWN AND GIRLS HAVE THEIRS. EACH SCHOOL IS DESIGNED TO SERVE WITH RESPECT TO THE GENDER'S NEEDS. THIS SCHOOL CORRESPONDS TO THE DESIGN SPECIFIC TO BOYS. BOYS' SCHOOL DEAL WITH LESS PRIVACY IN TERMS OF SITE CORRESPONDENCE TO THE SURROUNDINGS. GIRLS', HOWEVER, ARE MORE FILTERED FROM OUTSIDE. USUALLY IN BOYS' SCHOOLS IN KUWAIT THE STUDENTS ARE MORE LIKELY TO STAY LONGER OUTSIDE WAITING FOR THEIR PARENTS OR WHOMEVER IS GOING TO PICK THEM UP FROM SCHOOL. THUS, USERS OF THIS SCHOOL ARE MORE ACTIVE AROUND THE SCHOOL DURING PEAK HOURS, 12:30-2:30PM. BOYS STAY SOMETIMES PLAY GAMES SUCH AS SOCCER UNTIL THEY ARE PICKED UP. SUMMER HEAT AND SUNRAYS ARE EXTREMELY AGGRESSIVE AND COULD CAUSE SEVERE DAMAGES TO CHILDREN, VEGETATION, AND EVEN MATERIALS.



# MAJOR -PROJECT ELEMENTS-

CLASSROOMS

LABORATORIES

STUDIOS

OFFICES

RESTROOMS

CAFETERIA

KITCHEN

THEATRE

GYMNASIUM

PLAYGROUND

GALLERY ROOM

STORAGES

LIBRARY

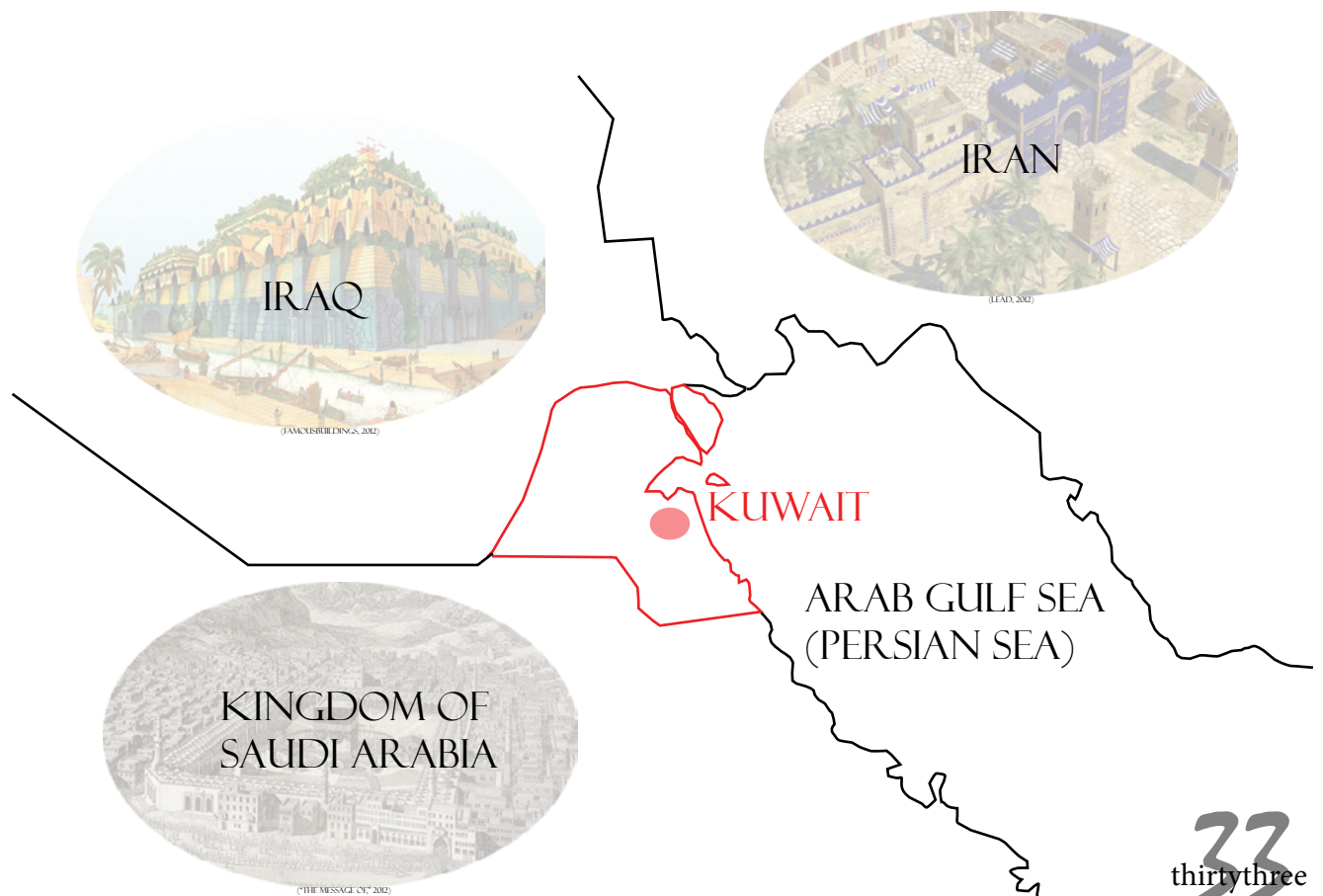
GARDEN

MECHANICAL ROOMS



# SITE INFORMATION

REGIONAL MAP & INFORMATION  
THE PROJECT IS LOCATED IN KUWAIT  
IN THE MIDDLE EAST SOUTH OF IRAQ  
AND ON NORTH EAST OF SAUDI ARABIA.  
KUWAIT IS ONE AMONG 5 OTHER ARAB  
COUNTRIES BORDERING THE ARAB GULF  
SEA BESIDES IRAN, A PERSIAN COUNTRY.  
THE 6 COUNTRIES ARE CALLED THE  
ARABIAN GULF COUNTRIES FOR THEIR  
GEOGRAPHICAL LOCATION. KUWAIT IS  
CONSIDERED AS ONE OF THE HOTTEST  
POPULATED COUNTRIES IN THE WORLD  
AS OF THE CIA'S STATISTICS; DRY DESERT;  
INTENSELY HOT SUMMERS; SHORT, COOL  
WINTERS.





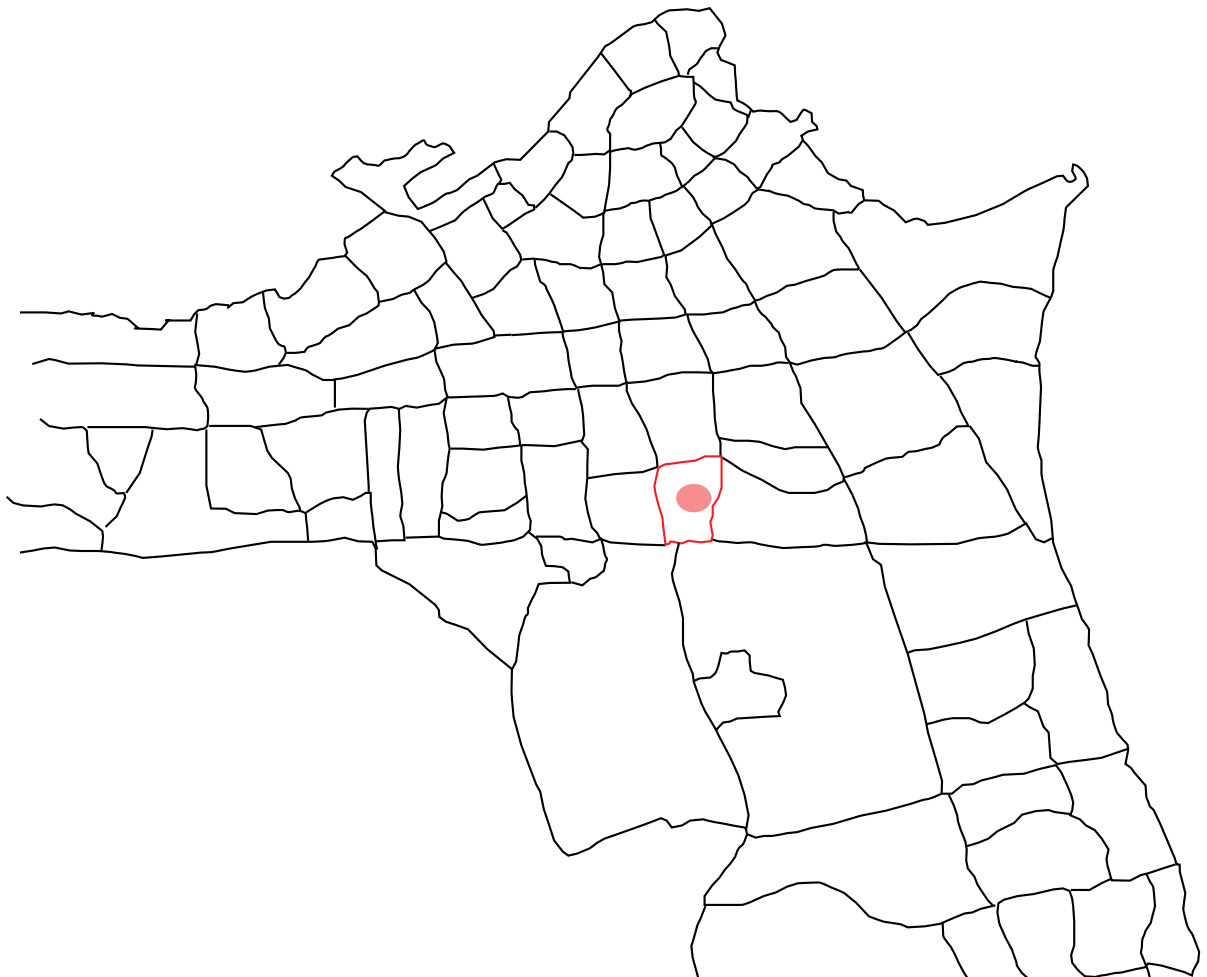
# SITE INFORMATION

## CITY MAP & INFORMATION

THE SITE IS LOCATED IN ONE OF THE NEW AREAS IN THE CENTER OF KUWAIT.

THE CITY NAME IS ALSIDDEEQ. IT IS UNDER DEVELOPMENT AND IS BEING BUILT FOR FUTURE RESIDENTS.

ARAB GULF SEA  
(PERSIAN SEA)



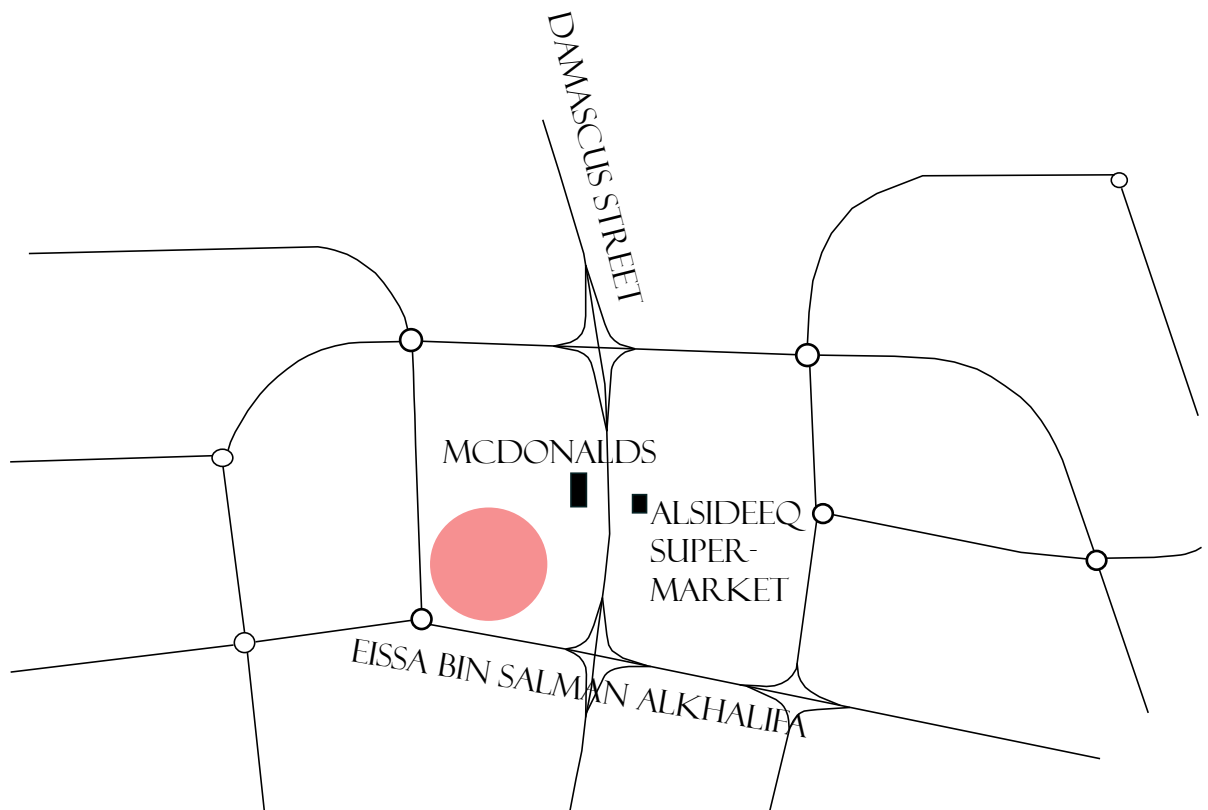




# SITE INFORMATION

## SITE MAP & INFORMATION

THE SITE MAKES A PERFECT LOCATION FOR A SCHOOL FOR THE STREETS EXITS AND ENTRANCES TO THE SITE. IT IS ALSO A BORDERED BY 3 MAJOR STREETS. MCDONALDS AND A BLOCK SUPER MARKET MAKE A GREAT LANDMARK AROUND THE SITE, WITHIN A 2 MILE RADIUS.





# PROJECT EMPHASIS

THIS DESIGN WILL BRING TO FOCUS RESPONSIBLE BEHAVIOR CONSISTENTLY IN A WAY THAT WILL KEEP THE CHILDREN IN A LEARNING MODE FOR AS LONG AS THEY ARE AT AND AROUND SCHOOL PREMISES.



# A PLAN FOR —PROCEEDING—

## RESEARCH DIRECTION

THE PROCESS OF THE PROJECT RESEARCH WILL FOCUS ON THEORETICAL PREMISE AND UNIFYING IDEA, TYPOLOGY, HISTORICAL CONTEXT OF THE SITE, AND PHYSICAL AND DEMOGRAPHIC CONTEXT OF THE SITE AND PROGRAMMING.

## DESIGN METHODOLOGY

THE DESIGN METHOD EMPLOYED FOCUSES ON BOTH QUANTITATIVE AND QUALITATIVE ANALYSIS OF THE SITE. THIS INCLUDES THE LANDSCAPE SURROUNDING THE SITE, GRAPHIC ANALYSIS AND REPRESENTATION, DIGITAL ANALYSIS AND REPRESENTATION AS WELL AS A SITE VISIT AND DOCUMENTATION. DATA ANALYSIS OF ECONOMIC AND CULTURAL STATISTICS ARE CONDUCTED THROUGH ARCHIVAL RESEARCH AND GRAPHIC REPRESENTATION. QUALITATIVE ASPECTS OF THE SITE ARE OBTAINED PRIMARILY THROUGH AN ON-SITE VISIT AS WELL AS INTERACTING WITH AND INTERVIEWING GROUPS OF PEOPLE.



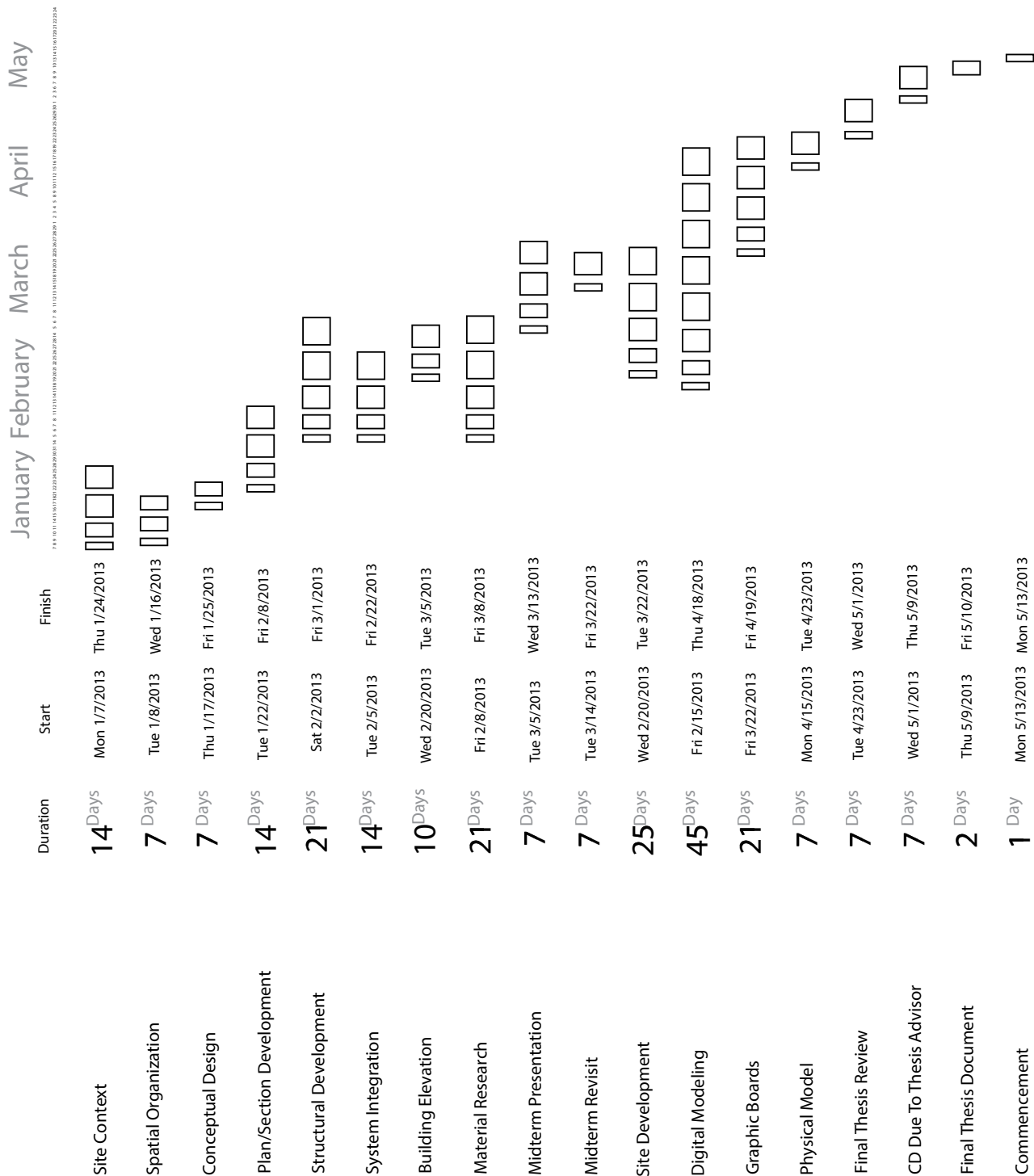
# A PLAN FOR PROCEEDING

## DOCUMENTATION PLAN

DOCUMENTATION IS A DIGITAL COMPILATION OF ALL JOURNAL ENTRIES, SKETCHES, HAND DRAWINGS, DIGITAL DRAWINGS AND MODELS, PHYSICAL MODELS, AND IMPORTANT NOTES. DOCUMENTATION IS SAVED WEEKLY IN TWO LOCATIONS; ONE ONLINE AND ONE HARD COPY.









# PREVIOUS DESIGN STUDIO EXPERIENCE

FALL 2009 ARCH271 - JOAN VORDERBRAUGEN

- TEA HOUSE - FARGO, ND
- BOAT HOUSE - MINNEAPOLIS, MN

SPRING 2010 ARCH272 - PHILIP STAHL

- FREE HAND DRAWING
- CHAIR DESIGN
- MONTESSORI SCHOOL - FARGO, ND
- HEMMAH DWELLING - FARGO, ND

FALL 2010 ARCH371 - REGIN SCHWAEN

- CASE STUDY - ST. BENEDICT CHAPEL, PETER ZUMTHOR
- WOODEN HOTEL - FARGO, ND
- WORKSHOP - NEW YORK INSTITUTE OF ARCHITECTURE (URBAN DESIGN/TUNNEL TRAFFIC JAM SOLUTION)



# PREVIOUS DESIGN STUDIO — EXPERIENCE —

SPRING <sup>2011</sup> ARCH372 - MIKE CHRISTENSON

- 6 PROJECTS WORKING WITH THOM MAYNE'S MORPHOSIS BUILDING.

FALL <sup>2011</sup> ARCH471 - DON FAULKNER

- SAN FRANCISCO ARCHITECTURE TOUR
- HIGH RISE - SAN FRANCISCO, CA
- KKE DESIGN COMPETITION

SPRING <sup>2012</sup> ARCH472 - PAUL GLEYE

- (STUDY ABROAD – EUROPE: FRANCE, BELGIUM, NETHERLANDS, GERMANY, SWEDEN, SPAIN, HUNGARY, ITALY, GREECE, FINLAND)  
URBAN DESIGN – BLOCK URBAN DESIGN



# PROGRAM DOCUMENT





# THEORETICAL PREMISE/ UNIFYING IDEA

LIFE EXPERIENCES HAVE A GREAT IMPACT ON INDIVIDUAL'S BEHAVIOR TOWARD THE WORLD AND PEOPLE. PEOPLE SHOULD DEAL WITH VARIOUS ISSUES AND DIVERSE PEOPLE IN-ORDER TO REINFORCE A CHARACTER THAT RELIES ON CREATIVITY AND DIVERSITY. A CHARACTER THAT IS SHAPED WITH KNOWING HOW TO DEAL WITH NEW ISSUES CREATIVELY, EFFICIENTLY AND LESS STRESSFUL. PEOPLE, THE YOUNGER GENERATION IN PARTICULAR, SHOULD LEARN HOW TO COMPREHEND FROM LIFE EXPERIENCES AND BUILD GOOD SENSE ON THOSE EXPERIENCES. WHEN WE COME TO CHILDREN AT SCHOOL, FOR INSTANCE, THEY INTERACT WITH GIVEN AND CAREFULLY PREPARED PROBLEMS BUT RARELY INTERACT WITH RANDOM REAL-LIFE PROBLEMS. REAL-LIFE PROBLEMS INCLUDE ISSUES THAT ARE UNEXPECTED AND COULD BE TIME SENSITIVE. THERE IS CERTAINLY MANY ISSUES A SCHOOL BUILDING RUN IN TO, BUT SCHOOL FACULTY ALWAYS TRY TO TAKE CARE OF THOSE ISSUES AND SOLVE THEM AWAY FROM CHILDREN'S WATCH MOSTLY FOR SAFETY CONCERNS. IN FACT, CHILDREN SHOULD WATCH HOW MATURE AND CREATIVE PEOPLE APPROACH PROBLEM SOLVING AND WHAT MEASURES ARE TAKEN IN-ORDER TO TAKE CARE OF THOSE PROBLEMS. (DENHARDT, 2009)

VISUAL LEARNING IS MORE POWERFUL THAN ANY OTHER LEARNING TOOL. PARTICULARLY CHILDREN, CHILDREN ARE FAR MORE EFFECTIVELY DRAWN INTO VISUAL LEARNING. STUDIES HAD SHOWN THAT LEARNING THROUGH VISUAL METHODS IS EFFECTIVELY FASTER AND EASIER FOR CHILDREN.



FOSTERING RESPONSIBLE BEHAVIOR IS ALSO LEARNING AND SHOULD BE NO LESS IMPORTANCE FROM OTHER SUBJECTS AT SCHOOL. CHILDREN MUST SEE WHAT ACTIONS AND SOLUTIONS ARE TAKEN TO SOLVE CERTAIN ARCHITECTURE/ENVIRONMENTAL RELATED ISSUES. THOSE SOLUTIONS WILL EVENTUALLY PROMPT CURIOSITY IN CHILDREN TO KNOW WHY CERTAIN MEASURES WERE TAKEN AS A RESPONSE FOR WHATEVER ACTION THAT HAVE OCCURRED AND WILL QUESTION THOSE SOLUTIONS. ADDITIONALLY, CHILDREN ARE VERY INTERESTED IN EXPERIMENTING THINGS THEY LEARN FROM THE OUTSIDE WORLD AT HOME. CHILDREN TEND TO TRY AND EXPERIMENT ALMOST EVERYTHING THEY LEARN TO WATCH THE RESULTS HAPPEN AGAIN OR SOMETIMES TO SHOW OFF IN FRONT OF THEIR FAMILY MEMBERS AND/OR FRIENDS. IF/WHEN CHILDREN LEARN USING CREATIVE SOLUTIONS AT SCHOOL WHICH TO CHILDREN IS ALSO CONSIDERED OF THE OUTSIDE WORLD, HENCE, CREATIVE SOLUTIONS WILL BE TAKEN WITH THEM TO THEIR HOMES AND POSSIBLY REFLECT ON THEIR FAMILY MEMBERS. (DENHARDT, 2009)

BESIDES, CHILDREN SOMETIMES ARE AFRAID TO TRY DOING NEW THINGS. CHILDREN SOMETIMES WANT TO IMITATE WHAT THE OLDER PEOPLE DO DIFFERENTLY AND IN THEIR OWN WAY. SADLY ENOUGH, MOST THOSE THINGS THEY WANT TO TRY/DO ARE CREATIVE RESPECTIVELY TO THEIR AGE. BUT UNFORTUNATELY LOW SELF-ESTEEM HOLDS THEM BACK FROM DOING SO. WE SHOULD BE MORE AWARE OF WHAT OUR CHILDREN ARE TRYING TO DO AND BE SUPPORTIVE TO THEM WHETHER THEIR EXPERIMENTS WERE SUCCESSFUL OR UNSUCCESSFUL. FURTHERMORE, SUPPORTIVE SUPERVISION AT SCHOOL WILL DEFINITELY PLAY AN EXTRAORDINARY ROLE IN BUILDING SELF-ESTEEM IN CHILDREN AND WILL POTENTIALLY CHALLENGE CLASSMATES TO COMPETE WITH THEIR FELLOW CLASSMATES. (DENHARDT, 2009) CHILDREN LOVE TO COMPETE AND BE BEST AT EVERYTHING THEY DO. WHEN HAVING TO DEAL WITH CREATIVE SOLUTIONS BECOMES A STANDARD AT SCHOOL, IT WILL POTENTIALLY REFLECT ON A SOCIETY'S BEHAVIOR TOWARDS THE ENVIRONMENT; IF NOT IN THE SHORT-TERM, POSSIBLY IN THE LONG-TERM IT WILL TAKE ACTION. (BOEVE-DE PAUW, 2011)



SOME TECHNIQUES FOR IMPROVING CREATIVITY INVOLVE DESIGN THINKING. WHEN THERE IS A SPECIFIC PROBLEM THAT NEEDS A DESIGN SOLUTION, TO COME UP WITH A SOLUTION ALMOST ALWAYS CREATIVE THINKING IS INVOLVED TO SOLVE THAT PARTICULAR PROBLEM. AND IF WHATEVER SOLUTION AN INDIVIDUAL CAME UP WITH WAS CONSIDERED AND POSSIBLY HAVE BEEN USED BEFORE BY SOMEONE, PEOPLE SHOULD LEARN HOW TO USE THAT SAME SOLUTION MORE EFFICIENTLY AND RESPONSIBILITY TOWARDS THE ENVIRONMENT. STUDENTS SHOULD ESTABLISH THE SENSE OF CREATIVE THINKING IN EVERY DECISION THEY MAKE WHETHER FOR THEIR ASSIGNMENTS OR FOR THEMSELVES. THIS ATTITUDE SHOULD BE A CHALLENGE THAT ALL STUDENTS MUST TAKE FOR SCHOOL WORK. (DENHARDT, 2009)

MAKING ETHICAL DECISIONS REQUIRES SEVERAL LEARNING TECHNIQUES. THE TRADITIONAL ETHICAL REINFORCEMENT WAY HAS BEEN BY PARENTS AND SCHOOL WHEN THEY TALK TO US OR TEACH US WITH TEXT BOOKS. HOWEVER, ETHICAL DECISIONS IS NOT ONLY LEARNED VERBALLY OR THROUGH TEXT BOOKS, ETHICAL DECISIONS CAN AND COULD BE LEARNED THROUGH OBJECTS THAT HAS NOTHING TO DO WITH THE TRADITIONAL LEARNING TOOLS. ARCHITECTURAL ELEMENTS, FOR INSTANCE, CAN ALSO BE ETHICAL REINFORCING TOOLS. ARCHITECTURE IS ONE OF THE BEST TEACHING TOOLS WHEN IT COMES TO TEACHING METHODS. ARCHITECTURE IS VISIBLE, SENSIBLE, AND TANGIBLE. ARCHITECTURE CAN TEACH AN ETHICAL MANNER BY TEACHING HOW TO TAKE ADVANTAGE OF NATURAL LIGHT IS, FOR INSTANCE. SHOWING HOW SUN RAYS CAN BE USED FOR SOLAR PANELS TO CONVERT SOLAR ENERGY TO ELECTRICAL ENERGY. ALSO USING WIND TURBINES AS A SOURCE OF ENERGY IS ANOTHER, AND THE LIST OF OTHER ARCHITECTURAL REINFORCING TOOLS GOES ON AND ON. AS LONG AS



THE ARCHITECTURAL ELEMENTS ARE VISIBLE AND/OR SENSIBLE TO PEOPLE THEY CAN BE LEARNING REINFORCEMENT TOOLS. ETHICAL BEHAVIOR IS VERY HIGHLY ENCOURAGED IN ELEMENTS THAT ARE TANGIBLE AND SENSIBLE. STUDIES SHOW THAT VISUAL LEARNING IS MORE EFFECTIVE THAN ANY OTHER TEACHING METHOD.

ARCHITECTURE MOVEMENT NOW IS HEADED TOWARDS THE ALTERNATIVES, SUSTAINABILITY, AND RESPONSIBILITY. THOSE ALTERNATIVES ARE BEING TESTED IN SPECIALLY PREPARED ENVIRONMENTS SUCH AS LAB ROOMS THEN PUBLISHED. HOWEVER, THERE IS NO SUCH A RULE THAT LIMITS ANY KIND OF TESTING/ EXPERIMENTING TO BE AWAY FROM THE PUBLIC'S WATCH. ALSO, LABS DO NOT REQUIRE ENCLOSED ROOMS WITH FIRE EXTINGUISHERS AROUND THE ROOM. LABS CAN ALSO BE OPEN FIELDS OR ROOFLESS ROOMS FOR AS LONG AS THEY CAN ACCOMPLISH THE DESIRED NEEDS OF THE EXPERIMENT. A SCHOOL, FOR INSTANCE, CAN ALSO BE A LAB FOR TESTING THE ALTERNATIVES FOR ENVIRONMENTALLY FRIENDLY METHODS. A SCHOOL CAN BE A VERY SUCCESSFUL LEARNING TOOL FOR CHILDREN EVEN IF THE EXPERIMENT USED ENDED IN A FAILURE! STUDENTS DON'T ALWAYS LEARN FROM SUCCESSFUL EXPERIMENTS, THEY CAN LEARN FROM BIG MISTAKES. IF AN ALTERNATIVE FAILED THE PURPOSE IT WAS USED FOR IN AN ARCHITECTURE DESIGN IT SHOULD CERTAINLY BE USED AS A DEMONSTRATION FOR CHILDREN WHY THAT DESIGN WAS A FAILURE AND THEY SHOULD BE CHALLENGED TO COME UP WITH A SUCCESSFUL ALTERNATIVE SOLUTION. (BOEVE-DE PAUW, 2011)

RESPONSIBLE BEHAVIOR REQUIRES MANY PEOPLE FROM DIFFERENT ASPECTS. SCHOOL OFFICIALS ARE RESPONSIBLE BEHAVIOR REINFORCEES, PARENTS, ARCHITECTS, POLITICIANS EVEN ECONOMISTS SHOULD BE PART OF MORAL RESPONSIBILITY TOWARDS THE ENVIRONMENT. RESPONSIBILITY TOWARDS THE ENVIRONMENT REQUIRES MANY PEOPLE AND FIELDS FOR TAKING ACTION. STUDENTS ARE REQUIRED TO SEE HOW ALL THOSE FIELDS INTERACT TO ACCOMPLISH AN ETHICAL BEHAVIOR; PERHAPS WHEN





CHILDREN SEE THAT ACTION IT WILL FOSTER RESPONSIBLE BEHAVIOR IN CHILDREN, IT WILL INSPIRE THEM.

WHAT MOTIVATES YOU NOW AS A STUDENT? WHAT WILL MOTIVATE YOU IN THE FUTURE? WHAT IS MOTIVATION? THESE QUESTIONS SHOULD BE ANSWERED BY ARCHITECTS BEFORE ASKED TO CHILDREN AND STUDENTS. AND WHEN AN ARCHITECT ANSWERS THESE QUESTIONS HE/SHE IS CHALLENGED TO SHOW WHAT HE/SHE CAN DO TO IMPLEMENT THESE DECISIONS TO STUDENTS. IN MY CASE AS AN ARCHITECTURE STUDENT, THE PROPOSED DESIGN OF THE SCHOOL I'M DOING MY THESIS ON IS GOING TO REFLECT MY OWN ANSWERS AND DECISIONS ON WHAT MOTIVATES ME AS AN INDIVIDUAL AS WELL AS A POTENTIAL ARCHITECT, WHAT WILL MOTIVATE ME AND WHAT IS MOTIVATION TO ME. I WILL WORK HARD TO MAKE SURE THAT THOSE DECISIONS I'M PROPOSING ARE TOOLS TO DELIVER MY THEORIES ON WHAT FOSTERING RESPONSIBLE BEHAVIOR IS ABOUT. WHAT MOTIVATES ME AS AN ARCHITECT THOUGH MIGHT BE NON-SENSE TO STUDENTS IF IT IS NOT DELIBERATED AT THE SAME THINKING LEVEL OF STUDENTS' OF EARLIER AGES, FURTHERMORE, WHAT MOTIVATES ME AS A GRADUATE STUDENT FROM THE U.S.A MIGHT BE LESS MOTIVATING TO THE PEOPLE OF KUWAIT IN THE MIDDLE EASTERN CULTURE. THE CHALLENGE TO ME HERE IS TO WORK COHESIVELY WITH THE KUWAITI TRADITIONS AND CULTURE AND MAKE SURE THAT MY THEORIES OF FOSTERING RESPONSIBLE BEHAVIOR ARE DELIVERED AT THE SAME LEVEL I EXPECT TO DELIVER TO THE PEOPLE IN THE U.S SINCE MY DEGREE IS INHERITED IN THE UNITED STATES.

ARCHITECTURAL ELEMENTS CAN CHANGE PERSPECTIVES ON MOTIVATION IN CHILDREN. IT CAN TEACH STUDENTS A LIFE LESSON; WHAT OUR RESPONSIBILITIES TOWARDS THE ENVIRONMENT ARE AND HOW



TO USE ADVANTAGEOUS RESOURCES EFFICIENTLY AND ENVIRONMENTALLY FRIENDLY. STUDENTS DO NOT NEED TO TAKE THE RESOURCES THAT ARE AVAILABLE TO THEM NOW FOR GRANTED. THEY NEED TO LEARN TO MAKE A DIFFERENCE AND BE ACCOUNTED FOR THEIR FINDINGS ON THE USE OF ENERGY. ONCE STUDENTS HAVE THE AFFINITY FOR THE RESPONSIBILITY TOWARDS THE ENVIRONMENT THEY WILL BE MOTIVATED TO GO BEYOND THE KNOWLEDGE OF RESPONSIBLE BEHAVIOR AND WILL PROVIDE BETTER LIVING FOR THE COMMUNITY AND SOCIETY IN THE FUTURE.

BOOTH IN HIS BOOK AGREES THAT PEOPLE NEED MOTIVATION TURN IN ENVIRONMENTAL ETHICS. "MOTIVATION SHOULD BE A CENTRAL FOCUS FOR ENVIRONMENTAL ETHICS, INTEGRAL TO (A) ANALYSIS OF THE CONSERVATION TERRAIN - THE DIMENSIONS OF THE MORAL CHALLENGE, THE REASONS FOR RHETORIC-BEHAVIOURS GAPS, AND REALISTIC PROSPECTS FOR REFORM; (B) DEVELOPMENT OF EFFECTIVE NORMATIVE RESPONSES TO THE GLOBAL CONSERVATION CRISIS; AND (C) STRATEGIC TASKS, SUCH AS PROMOTING THE VALUE OF ENVIRONMENTAL PHILOSOPHY." TO A CERTAIN POINT WE GOT TO THE POINT WHERE ETHICS BECAME SOMETHING THAT HAS TO BE FORCED IN PEOPLE SOMEHOW TO UNDERSTAND THE NECESSITY OF ETHICAL BEHAVIOR TOWARDS THE ENVIRONMENT. (BOOTH, 2009)

"MOTIVATION IS AT THE PSYCHOLOGICAL EDGE OF BEHAVIOR, WHERE BELIEFS, DESIRES, CONVICTIONS, SOCIAL PRESSURES, AND SO ON TIP INTO MANIFESTED BEHAVIOR." (BOOTH, 2009) MOTIVATION IS A MOVEMENT DRIVEN BY THE SELF CONSCIOUSLY OR NON-CONSCIOUSLY. BEHAVIOR IS WHAT DERIVES US TO SET OUR MOTIVATIONS AND ACT UPON OUR MOTIVATIONS. MOTIVATION IS ABSOLUTELY MANIPULATIVE AND EASY TO CONTROL, "PEOPLE THINK THEY KNOW WHY THEY BEHAVE IN CERTAIN WAYS BUT THEIR CONFIDENCE BELIES THE MOSTLY UNCONSCIOUS AND THEREFORE INACCESSIBLE NATURE OF MOTIVATION." (BOOTH, 2009)



Domain	Example
Morality	Commitment to protect the intrinsic values of nature or to protect biodiversity for future generations
Aesthetics	Desire to protect the beauty of wild nature or particular charismatic species
Human-nature relationships	Valuing relationships with places in nature, love of wildlife
Eucamonia	Conceptions of the good life that include relationships with nature
Religion or spirituality	A religious sense of duty or spirituality inspired devotion to nature as creation
Economics	Valuing nature as a resource

(BOOTH, 2009)

ENVIRONMENTAL VALUES AND RESPONSIBILITY DEAL WITH THE BASIS AND JUSTIFICATION OF ENVIRONMENTAL POLICY. THE CHALLENGE IS TO BRING TOGETHER CONTRIBUTIONS FROM ARCHITECTURE, PHILOSOPHY, LAW, ECONOMICS, AND OTHER DISCIPLINES, WHICH RELATE TO THE PRESENT AND FUTURE ENVIRONMENT OF HUMANS AND OTHER SPECIES; AND TO CLARIFY THE RELATIONSHIP BETWEEN PRACTICAL POLICY ISSUES AND MORE FUNDAMENTAL UNDERLYING PRINCIPLES OR ASSUMPTIONS.

THE STUDY OF ENVIRONMENTAL VALUES AND RESPONSIBILITY REDUCES AND POSSIBLY PREVENT DAMAGE TO US HUMANS AND OTHER SPECIES THAT ARE SHARING THE GLOBE WITH US. HENCE, WE WILL IMPROVE OUR WAY OF LIVING BY USING LESS RESOURCES TO SAVE FOR THE FUTURE AND GET THE MOST OF THE RESOURCES FOR THE NEXT GENERATIONS.

NONE OF US IS BORN ACTING RESPONSIBLY. A RESPONSIBLE CHARACTER IS FORMED OVER TIME. IT IS MADE UP OF OUR OUTLOOK AND DAILY HABITS. ASSOCIATED WITH FEELINGS, THOUGHTS, AND ACTIONS. RESPONSIBLE PEOPLE ACT THE WAY THEY SHOULD WHETHER OR NOT ANYONE IS WATCHING. THEY DO SO BECAUSE THEY UNDERSTAND THAT IT'S RIGHT AND BECAUSE THEY HAVE THE COURAGE AND SELF-CONTROL TO ACT DECENTLY, EVEN WHEN TEMPTED TO DO OTHERWISE.



WE WANT OUR CHILDREN TO APPRECIATE THE IMPORTANCE OF BEING RESPONSIBLE. WE ALSO WANT THEM TO DEVELOP THE HABITS AND STRENGTH TO ACT THIS WAY IN THEIR EVERY-DAY LIVES. (DENHARDT, 2009)





# THEORETICAL PREMISE/ — UNIFYING IDEA —

LEARNING RESPONSIBILITY IS NOT AN EASY JOB. IT TAKES COURAGE, COMMITMENT, AND MOTIVATION TO BEHAVE THE WAY YOU ARE EXPECTED TO BEHAVE. FOSTERING RESPONSIBILITY REQUIRES EXPERTS THAT KNOW WHAT IT MEANS TO REFLECT RESPONSIBILITY ON THE SOCIETY'S BEHAVIOR. BECAUSE RESPONSIBLE BEHAVIOR CAN SUCCESSFULLY MOVE A NATION FORWARD AND OVERCOME THEIR ISSUES; WHETHER THOSE ISSUES WERE ECONOMY, SOCIAL, POLITICAL, PHILOSOPHICAL, ENVIRONMENTAL,...ETC. RESPONSIBILITY CAN BE USED FOR MANY FIELDS AND THEY ALL LEAD TO SUCCESS.

## SUMMARY

IN-ORDER TO FOSTER RESPONSIBILITY WE NEED MOTIVATION. MOTIVATION IS WHAT MOVES US FORWARD AND MAKES US DECIDE WHETHER OR NOT WE CAN OVERCOME OUR PROBLEMS IF THERE IS ANY. AND TO BECOME A GREAT MOTIVATED PERSON YOU NEED ETHICS TO GUIDE YOU TO THE LAND OF MOTIVATION TOWARDS RESPONSIBLE BEHAVIOR. COMMITMENT TO PROTECT THE ENVIRONMENT SHOULD STIMULATE OUR ETHICAL MOTIVATIONS TO LIVE DECENTLY.

ARCHITECTURE IS USUALLY PERCEIVED AS THE STIMULANT ASPECT TO HUMAN'S BEHAVIOR. THOUGH, OUR BEHAVIOR



IS THE INITIAL INSPIRATION TO HOW ARCHITECTURE SHOULD BE PERCEIVED AND FORMED. ARCHITECTURE IS THE PRODUCT OF OUR DESIGN SOLUTION AND WHAT MAKES ARCHITECTURE RESPONSIBLE TO THE ENVIRONMENT OUR DESIGN SOLUTION MUST BE AWARE OF RESPONSIBILITY TOWARDS THE ENVIRONMENT. SCHOOL IS WHERE STUDENTS LEARN HOW TO BECOME A SUCCESSFUL ACTIVE PERSON ON THE ENVIRONMENT, IT IS ALSO WHERE STUDENTS LEARN RESPONSIBILITY AND HOW TO MAKE ETHICAL DECISIONS. ARCHITECTURE IS THE TOOL TO FOSTER RESPONSIBILITY IN CHILDREN SINCE IT IS A VISUAL OBJECT AND CAN ABSOLUTELY BE INSTRUCTIONAL FOR AS LONG AS IT IS ILLUSTRATING WHEN, HOW, AND AT WHAT QUANTITY WE USE ENERGY. AND WHAT ARE THE ALTERNATIVES THAT COULD SERVE US SIMILARLY TO THE INITIAL SOURCE OF ENERGY BUT WITH CARE FOR THE ENVIRONMENT AND THE SPECIES SHARING THE GLOBE WITH US.

IT'S NEVER TOO LATE TO LEARN ANYTHING WHETHER IT WAS A SCIENCE COURSE OR A MORAL LESSON. WE HUMANS LEARN EVERYDAY AND NEVER STOP. WHAT STOPS IS OUR MOTIVATION TO LEARN. HOWEVER, IT'S ALWAYS EASIER TO TEACH A YOUNGER PERSON A LESSON THAN AN OLDER PERSON. OUR CHILDREN ARE THE INSPIRATION FOR THE FUTURE, THEY ARE THE LEADERS OF THE NEXT GENERATIONS. IF WE TEACH THEM TO BECOME RESPONSIBLE TOWARDS THE ENVIRONMENT THEY WILL THEN HAVE A HEALTHIER, EASIER AND POTENTIALLY LONGER LIFE TO LIVE.



# TYPOLOGICAL RESEARCH

CASE STUDY 1:

DURANES ELEMENTARY SCHOOL ALBUQUERQUE, NM

BAKER ARCHITECTURE + DESIGN

CASE STUDY 2:

BARCELONA ELEMENTARY SCHOOL ALBUQUERQUE, NM

BAKER ARCHITECTURE + DESIGN

CASE STUDY 3:

ZERO ENERGY SCHOOL GROUND ZERO, NY

SOM



# TYPOLOGICAL RESEARCH



CASE STUDY I:

## DURANES ELEMENTARY SCHOOL

BAKER ARCHITECTURE + DESIGN





## THE DURANES ELEMENTARY SCHOOL

ALBUQUERQUE, NM, USA

10,000 SQFT

THIS BUILDING HAS A GREAT FOCUS ON IN-DOOR HIGH-QUALITY ENVIRONMENT AND OFFERS SOLUTIONS TO COMMON PROBLEMS THAT SOME SCHOOLS SUFFER FROM LACK OF ACOUSTICAL DESIGN AND PASSIVE SOLAR ENERGY USE.

SUMMERS IN KUWAIT ARE EXTREMELY HOT AND HUMID. BUILDINGS IN KUWAIT LACK DESIGN SOLUTIONS THAT REDUCE HEAT PASSIVELY OR USE LESS MECHANICAL COOLING SYSTEMS. SCHOOLS ESPECIALLY NEED DESIGN SOLUTIONS THAT USES PASSIVE SOLAR ENERGY AND IS ALSO NOT SEVERELY WARM IN-DOORS. NATURAL-DAYLIGHTING IS AN ADVANTAGE WE HAVE IN KUWAIT AND MUST BE USED, BUT IN ARCHITECTURALLY WE TRY TO REDUCE THE DISADVANTAGES ASSOCIATED WITH IT SUCH AS HIGH-TEMPERATURES AND DIRECT LIGHTING WHICH ARE SOMETIMES OVER EXPOSED AND DISADVANTAGEOUS; WHEN SCHOOL WHITE-BOARDS BECOME OVERLY REFLECTANT. THE DURANES ELEMENTARY SCHOOL PROVIDES AN EXCELLENT SOLUTION TO DIFFUSE DIRECT DAYLIGHTING IN SOUTH-FACING CLERESTORIES.

CULTURALLY SPEAKING, DIFFUSED GLAZING SYSTEM ALSO WORKS GREAT FOR SCHOOL STAFF SINCE ELEMENTARY SCHOOL TEACHERS MOSTLY ARE WOMEN AND MANY WOMEN IN KUWAIT WEAR A VEIL TO COVER THEIR HEAD AND SO DIFFUSED GLAZING WINDOWS WILL ALLOW THEM TO FEEL MORE COMFORTABLE TO MOVE AROUND WINDOWS WITHOUT HAVING TO WORRY ABOUT BEING WATCHED BY PEOPLE FROM OUTSIDE.







MANY SCHOOLS IN KUWAIT ALSO SUFFER FROM HIGH NOISES COMING OUT OF CORRIDORS INTO CLASSROOMS, AND THAT STARTED WHEN SCHOOL OFFICIALS IN SOME SCHOOLS IN KUWAIT SOLVED THE VERY WARM CORRIDORS PROBLEM BY ENCLOSING THE CORRIDORS WITH GLASS AND NOT TAKING INTO CONSIDERATION THE ECO THAT WILL BE REFLECTED IN THE CORRIDORS DUE TO THE TERRAZZO FLOORS AND CONCRETE WALLS AND CEILINGS AND THE ADDITIONAL GLASS THAT WAS ADDED TO ENCLOSE THE HALLWAYS. THE DURANES ELEMENTARY USED HIGH-QUALITY MATERIALS FOR NOISE REDUCTION. TECTUM ROOFS WERE USED INSTEAD OF STANDARD CEILINGS WHICH PROVIDES %20 NOISE REDUCTION.

THE SCHOOL ALSO HAS A GREAT EAST-WEST ORIENTATION FOR MAXIMUM DAYLIGHTING WITH MINIMAL HEAT-GAIN FROM STRONG DIRECT SUN RAYS COMING INTO THE BUILDING. WHAT IS GREAT ABOUT THE DURANES ELEMENTARY ALSO IS THAT THERE IS A SOLUTION FOR HEAT GAIN IN THE WINTER WHICH HOWEVER IS NOT REALLY NEEDED FOR MY DESIGN SINCE WINTERS IN KUWAIT ARE NOT SEVERELY COLD AND SO HEAT GAIN IS NOT NECESSARILY NEEDED INDOORS.

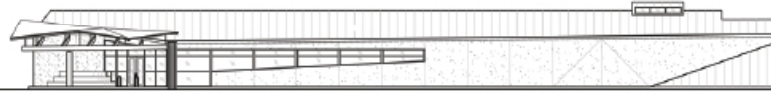
HAVING PASSIVE ENERGY IN HALLWAYS AND SEVERAL OTHER ROOMS WILL HOPEFULLY RAISE CURIOSITY IN CHILDREN TO UNDERSTAND THE ADVANTAGES OF THE SUN AND WILL HOPEFULLY FOSTER THE IDEA THAT SUN IS NOT ONLY A SOURCE OF HEAT BUT ALSO A SOURCE OF LIGHT THAT COULD BE VERY BENEFICIAL EVEN IN SEVERE CLIMATES AS LONG AS WE HAVE THE RIGHT SOLUTIONS AND IDEAS ON HOW TO USE ENERGY EFFECTIVELY AND RESPONSIBLY. HOPEFULLY TEACHERS WILL TAKE STUDENTS BY HAND TO SHOW THE STUDENTS IN REAL LIFE HOW WE CAN COME UP WITH GOOD SOLUTIONS FOR COMMON PROBLEMS WE HAVE AND EXPERIENCE IN EVERYDAY LIFE. SINCE THE SOLUTION IS VISIBLE TO THE OCCUPANTS, IT SHOULD NOT BE HARD TO TEACH A VISUAL LESSON TO CURIOUS KIDS.



SITE



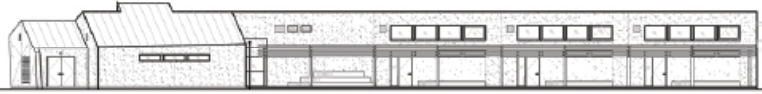




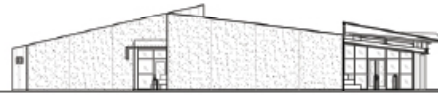
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West Elevation  
Scale: 1/16" = 1'-0"



South Elevation  
Scale: 1/16" = 1'-0"



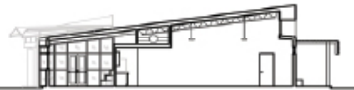
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Section A  
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Section B  
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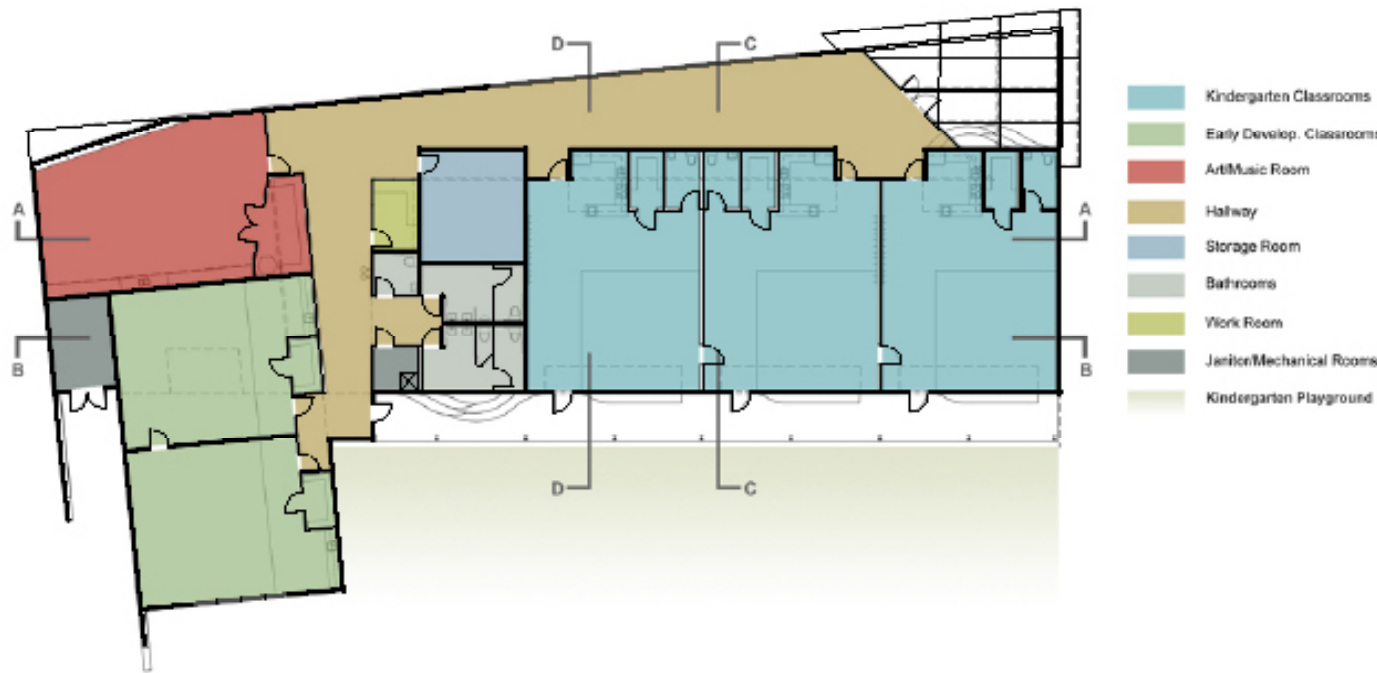
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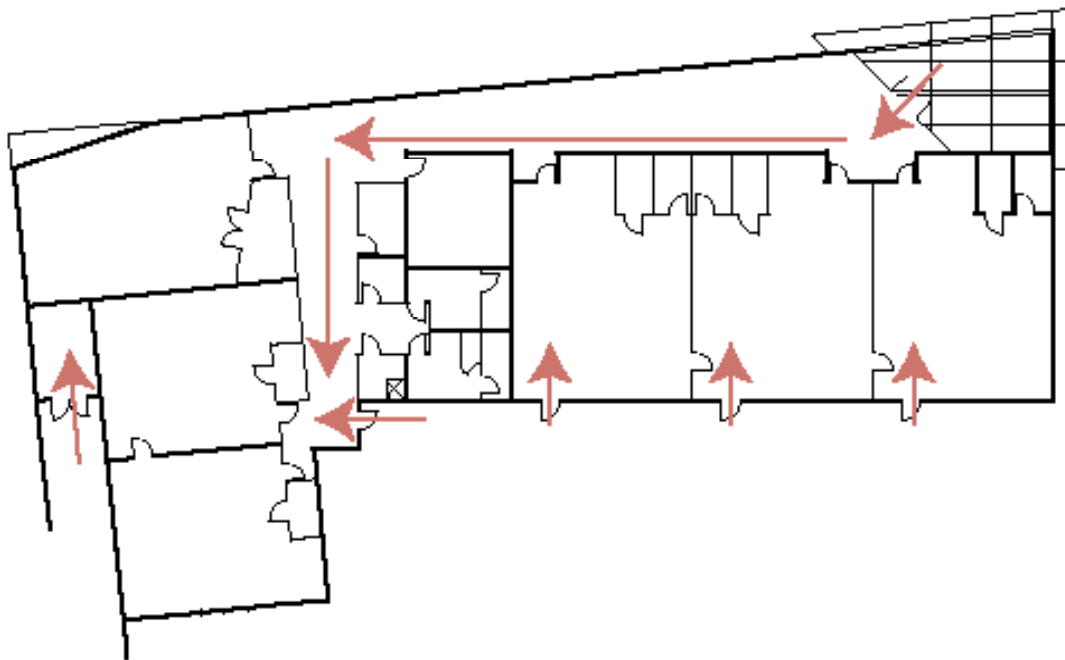
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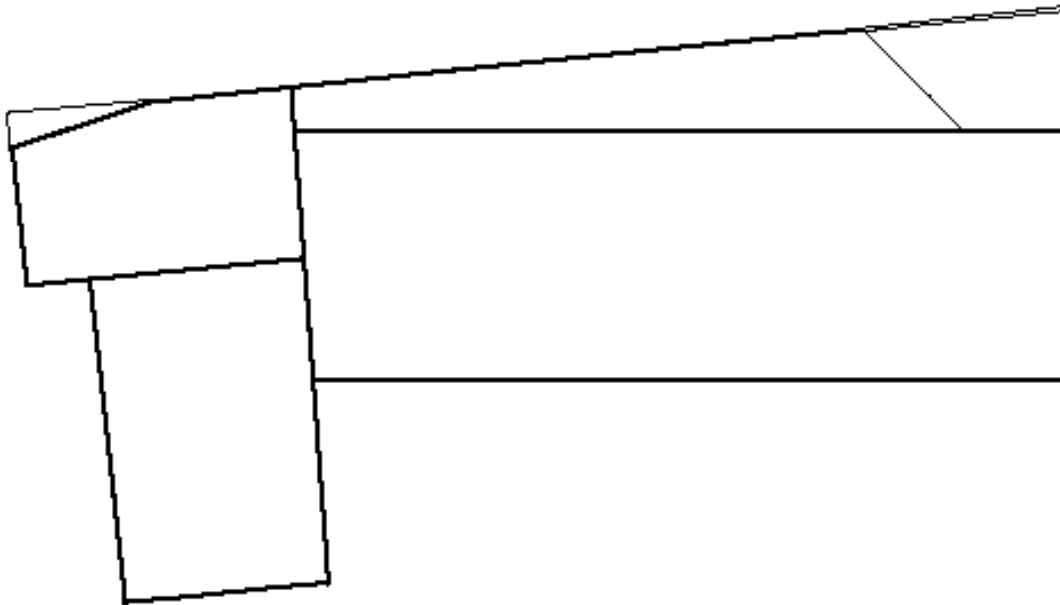


FLOOR PLAN

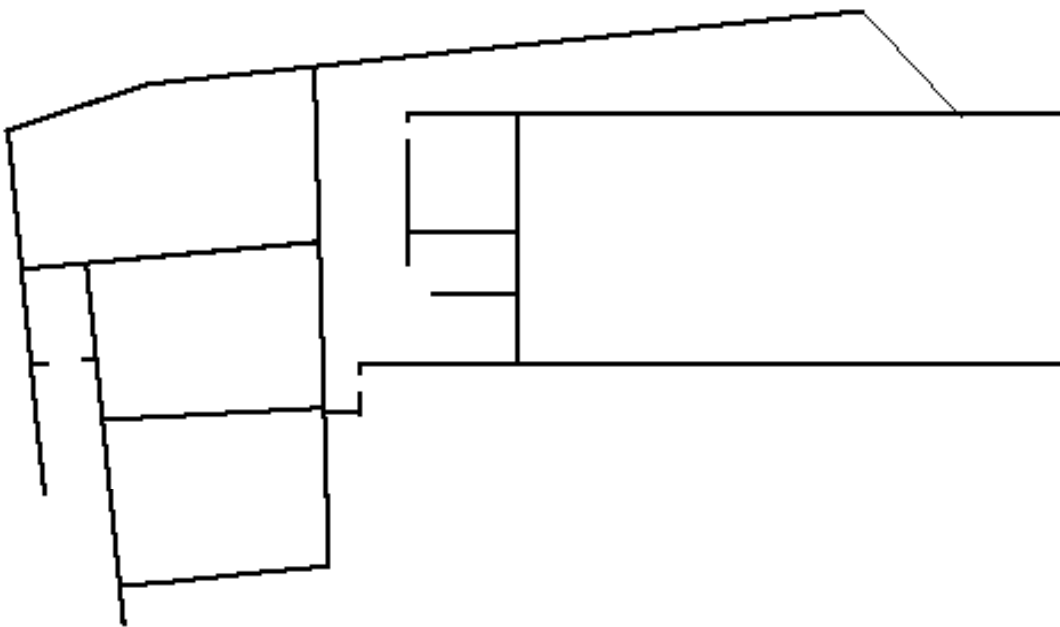


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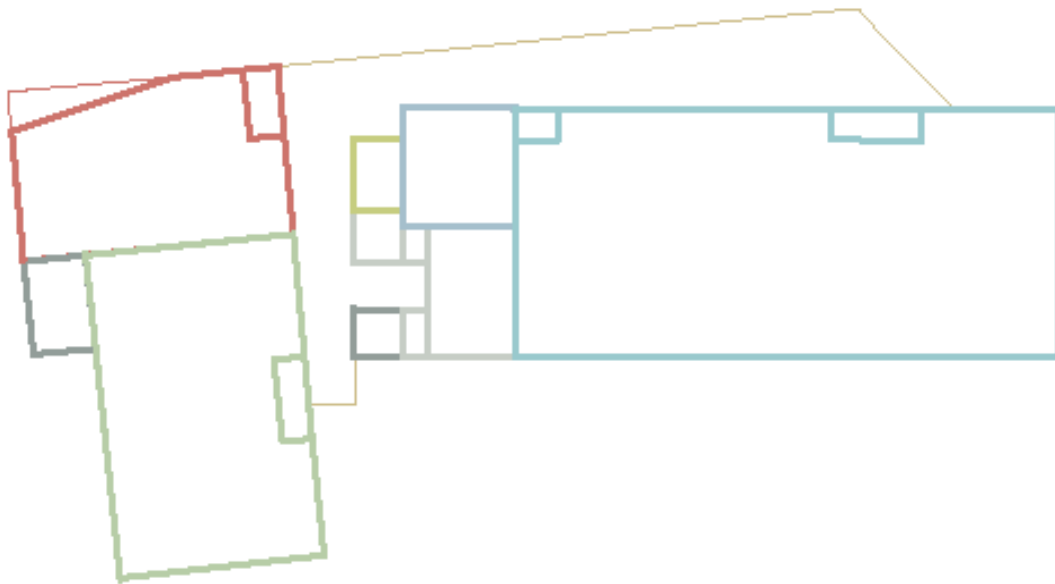


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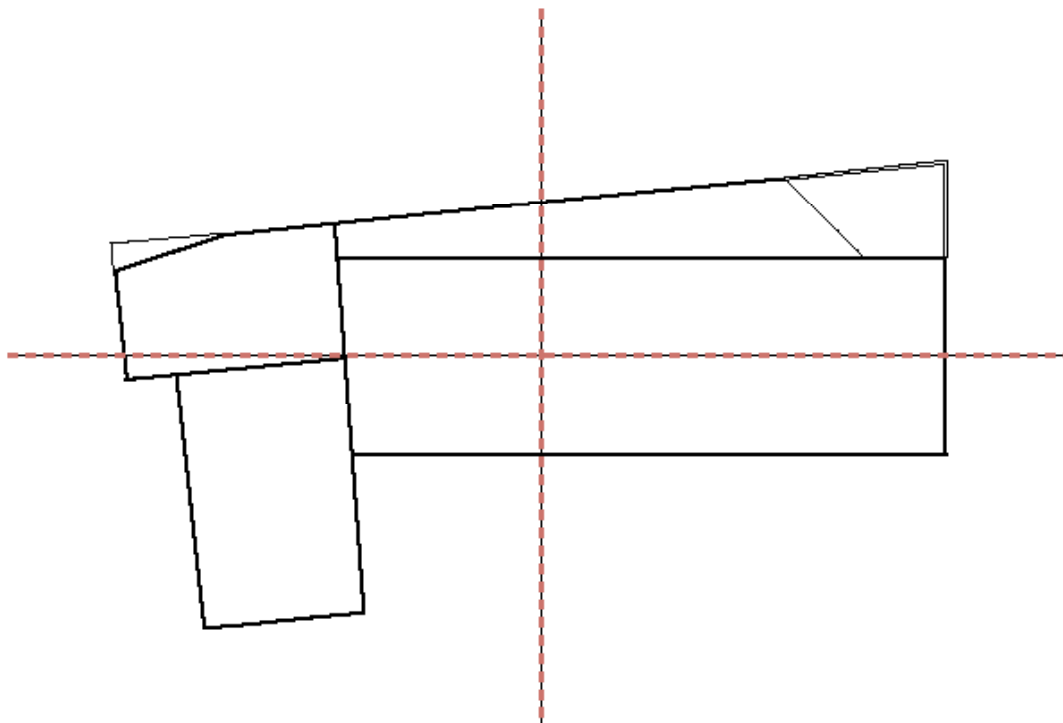


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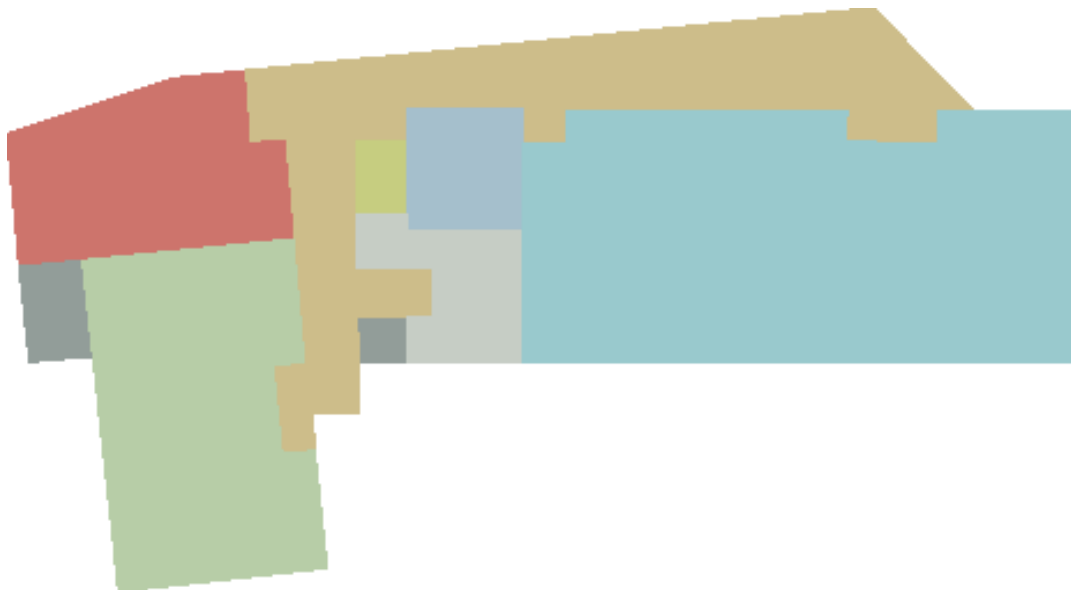


GEOMETRY

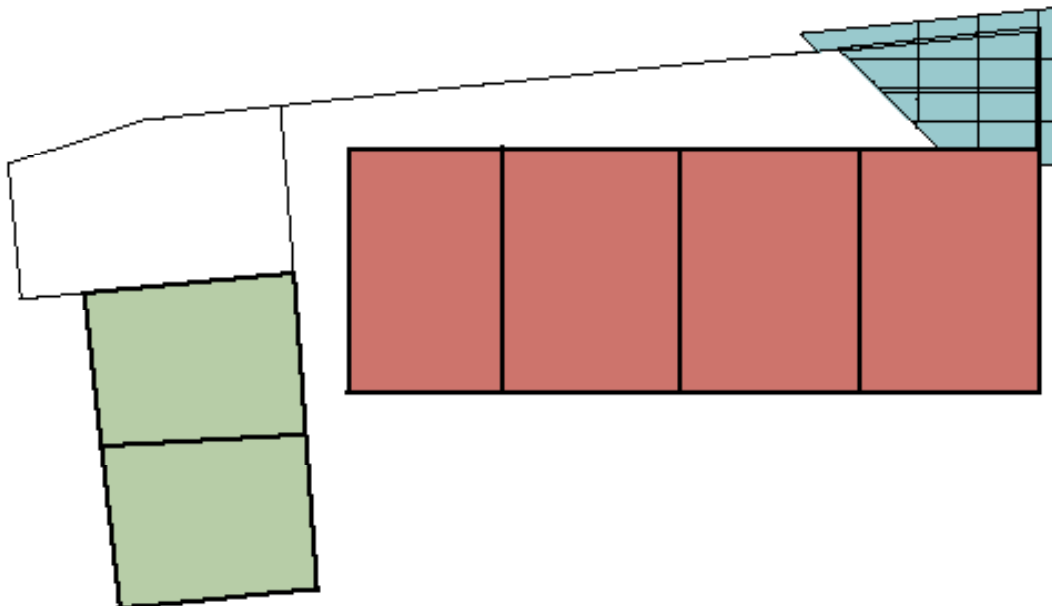


SYMMETRY AND BALANCE





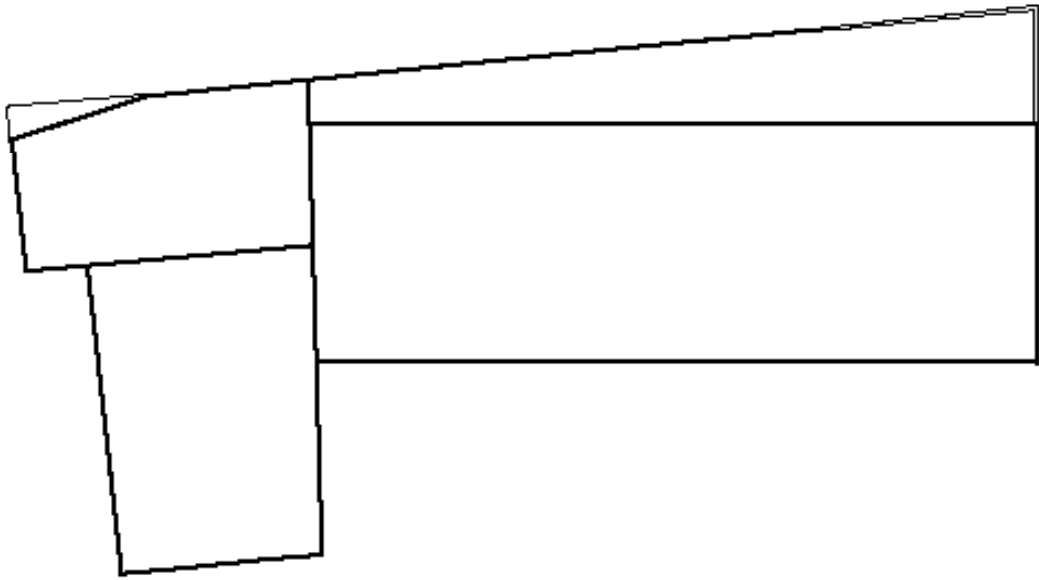
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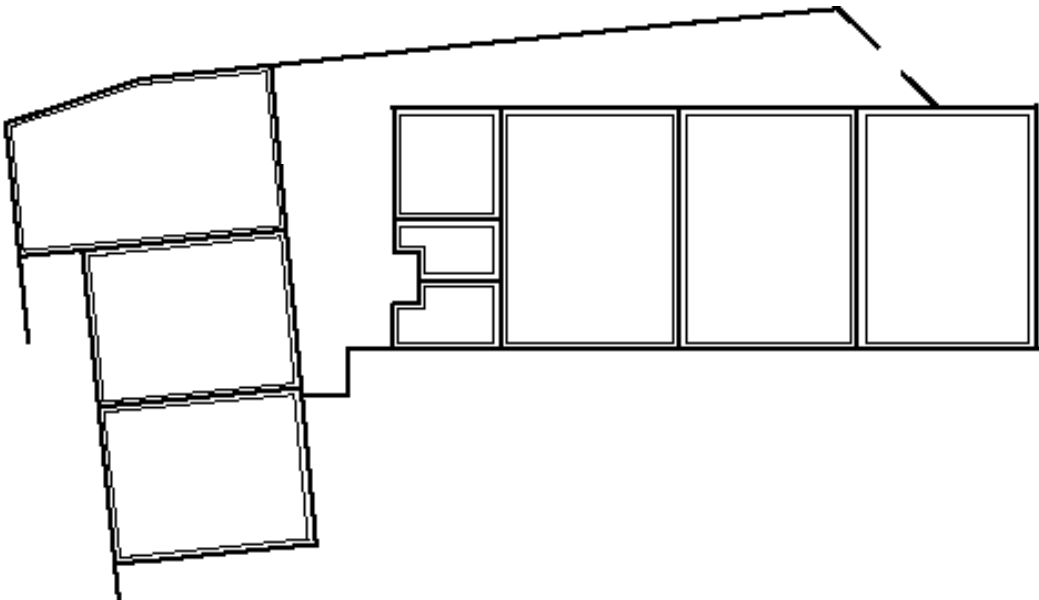
REPETITIVE TO UNIQUE





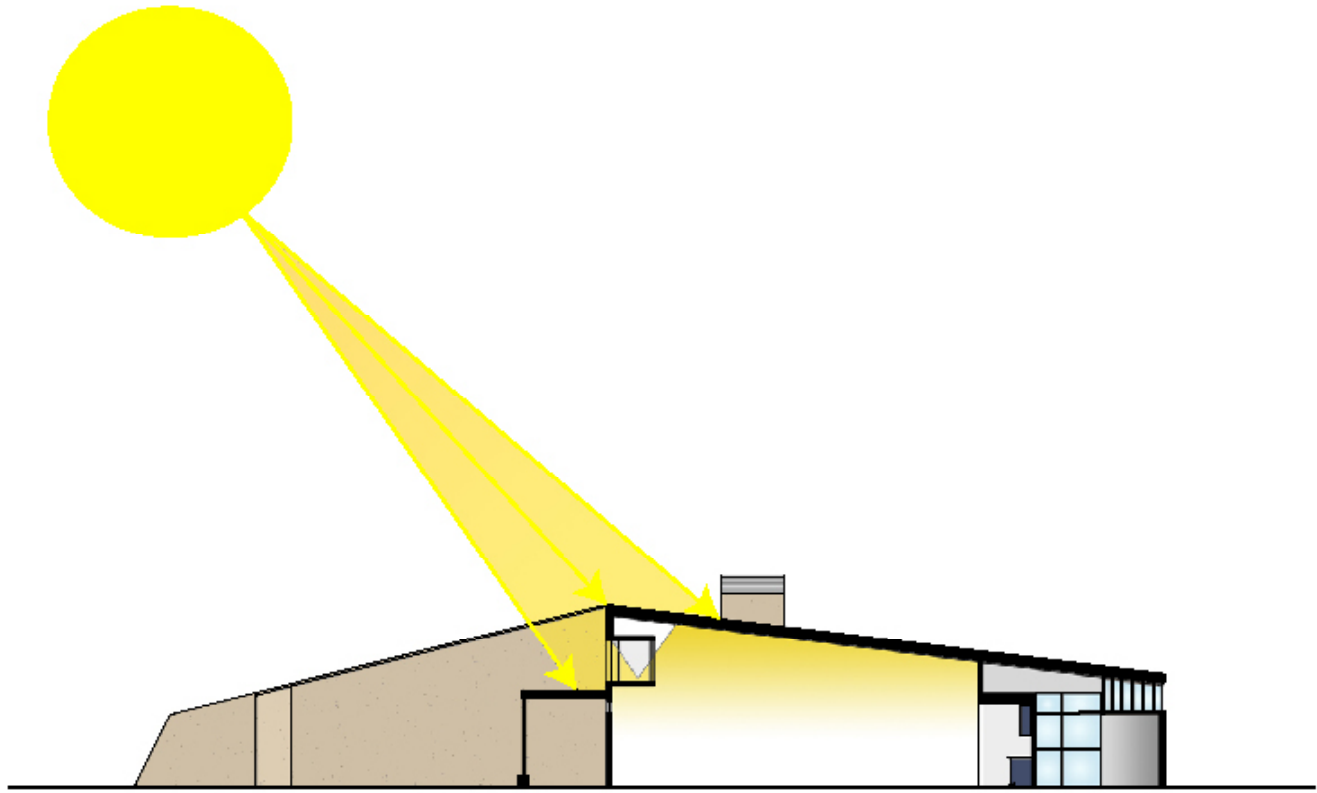


HIERARCHY

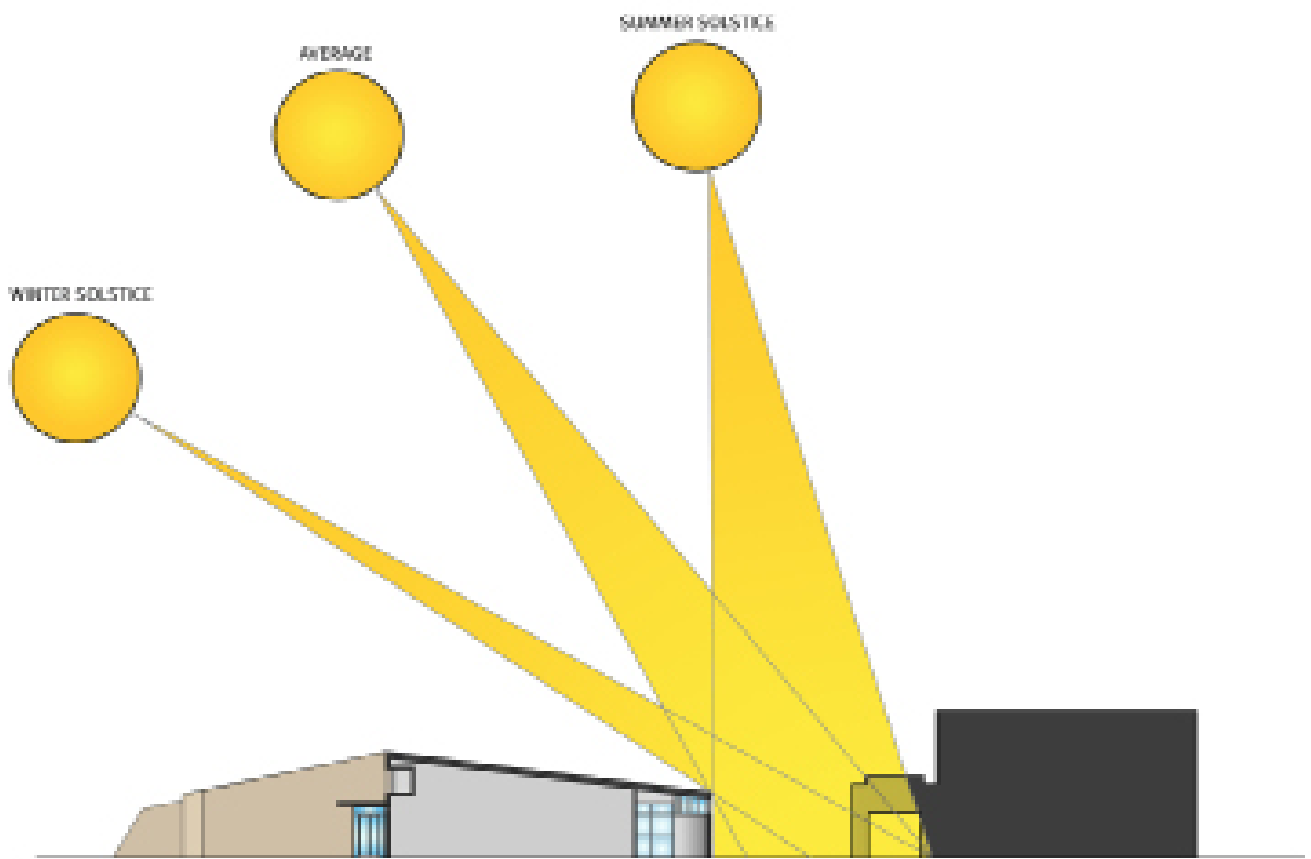


UNIT TO WHOLE





NATURAL LIGHT





# TYPHOLOGICAL RESEARCH



CASE STUDY 2:

## BARCELONA ELEMENTARY SCHOOL

BAKER ARCHITECTURE + DESIGN



BARCELONA ELEMENTARY SCHOOL

ALBUQUERQUE, NM, USA

12,500 SQFT

A SCHOOL THAT USES AN EXCELLENT AMOUNT OF RECYCLED CONSTRUCTION MATERIALS, HIGH-QUALITY THERMAL INSULATION; HEATING AND LIGHTING FIXTURES THAT ARE ENERGY AD-EQUATE; FRESH AIR SUPPLY AND AIR EXCHANG-ES; PASSIVE SOLAR LIGHTING IN ALL ROOMS TOGETHER WITH MULTIPLE LIGHTING LEVELS THAT WORK EFFECTIVELY WITH NATURAL DAY-LIGHTING.

THE THESIS PROJECT I AM DOING IS CON-CERNED WITH SUSTAINABLE ARCHITECTURE, ARCHITECTURE THAT USES ENERGY RESPON-SIBLY AND IS NOT HIDDEN BEHIND THE SCENES. THIS SCHOOL IS A GOOD EXAMPLE FOR FUNC-TIONAL FACILITY AND YET ENCOURAGE RESPON-SIBILITY ALONG WITH CREATIVE SOLUTIONS FOR EFFECTIVE TEACHING AS WELL AS A CONDUCTIVE LEARNING ENVIRONMENT.

THE SCHOOL I'M PROPOSING ALSO IS CON-CERNED WITH THE USE OF MATERIALS THAT ARE AVAILABLE IN THE COUNTRY AT LOW COSTS AND ARE AVAILABLE IN HIGH QUANTITIES. MA-TERIALS THAT ARE FROM AROUND THE SITE REALLY IMPLEMENT WHAT THE DESIGN IS FROM AND IS ABOUT. FURTHERMORE, THE DESIGN THAT IS RESPONDING TO THE CONTEXTS OF THE SITE AND THE GEOGRAPHICAL ASPECTS SPEAK CLEARER ABOUT RESPONSIBILITY AND CAREFUL CONSIDERATION TO THE ENVIRONMENT. BAR-CELONA ELEMENTARY SCHOOL USED MATERIALS RESPONSIBLY AND CONSIDERABLY TO WHAT THE SITE PROVIDES TO SHAPE THE DESIGN OF THE SCHOOL. RECYCLED MATERIALS WERE USED IN THE STRUCTURE OF THE SCHOOL, AND PAS-SIVE SYSTEMS WERE USED RESPONSIVELY TO THE SITE'S CONTEXT.









KUWAIT'S CLIMATE HAS A STRONG INFLUENCE ON THE BUILDINGS' ORIENTATION. ORIENTING A BUILDINGS OPENINGS AND CIRCULATIONS ARE CRITICAL. WHEN TAKING SUSTAINABILITY IN CONSIDERATION FOR THE DESIGN OF ANY BUILDING IN KUWAIT IT IS VERY HIGHLY RECOMMENDED TO UNDERSTAND THE CLIMATE FACTS.

KNOWING WHERE DIRECT AND INDIRECT LIGHTS ARE PLAY A MAJOR ROLE IN SHAPING THE STRUCTURE OF THE BUILDING, THICKNESS OF WALLS, TYPE OF MATERIALS USED FOR WALLS, AND ALSO THE AMOUNT OF ENERGY NEEDED FOR EACH SIDE OF THE BUILDING.

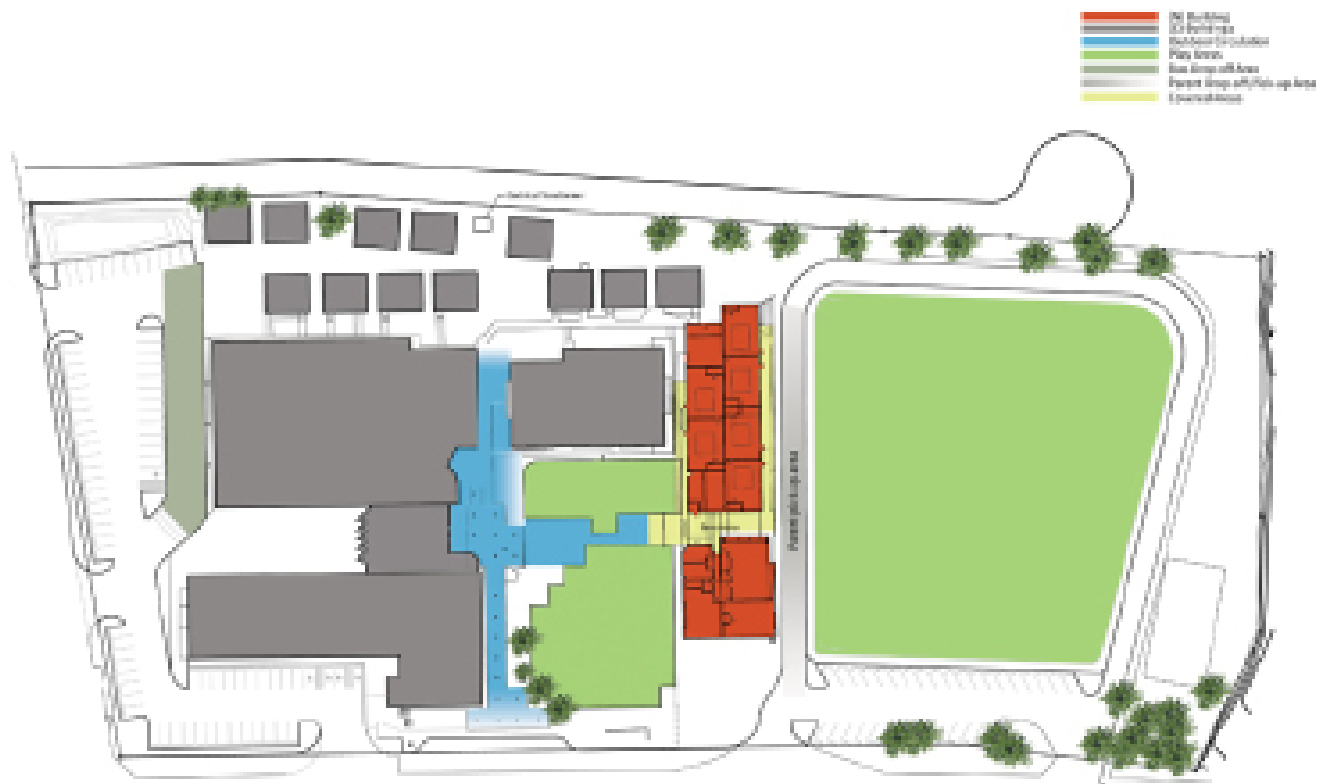
NEW MEXICO HAS AN EXTREME WEATHER AND IS VERY CRITICAL IN THE INFLUENCE OF THE DESIGN OF BUILDINGS. THE BARCELONA ELEMENTARY SCHOOL CORRESPONDS TO THE CLIMATE OF NEW MEXICO WITH REGARDS TO THE CLIMATE FACTS. THE SOLAR ORIENTATION ON THE SITE PLAYED A MAJOR ROLE IN THE SCHOOL'S DESIGN.

ONE OF THE MAJOR ISSUES ARCHITECTS EXPERIENCE WHEN SOLVING AN ARCHITECTURAL DESIGN PROBLEM IS GOING OVER SEVERAL ISSUES SUCH AS SOCIAL ASPECTS CULTURAL, POLITICAL AND ENVIRONMENTAL ASPECTS AND HAVING TO SATISFY AS MUCH AS POSSIBLE OF ALL OF THEM. THE BARCELONA ELEMENTARY SCHOOL COVERS THE ENVIRONMENTAL ASPECTS OF THIS DESIGN PROBLEM. THE CASE STUDY HERE IS BRINGING US ONE STEP CLOSER TO OUR DESIGN SOLUTION.

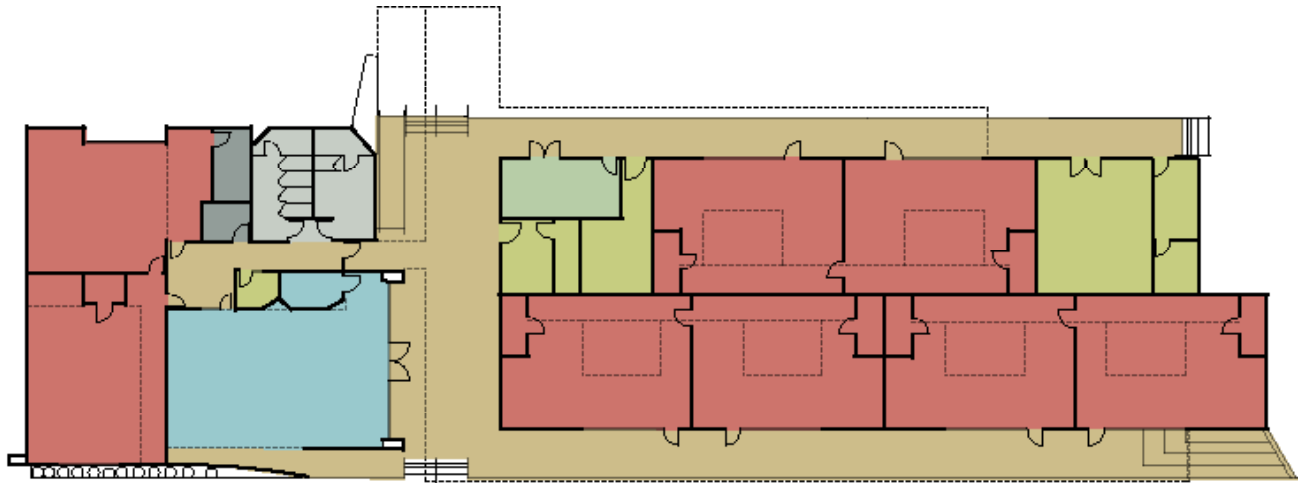
ADDITIONALLY, THE BARCELONA ELEMENTARY TOUCHES OVER THE CULTURAL ASPECT OF THE DESIGN PROBLEM, THE BARCELONA ELEMENTARY SCHOOL HAS AN ART/MUSIC ROOM THAT GATHERS THE COMMUNITY'S LOCAL EVENTS. SINCE THE NEIGHBORHOOD MY SITE IS LOCATED IN IS A NEW NEIGHBORHOOD ITS COMMUNITY WOULD NEED A COMMON PLACE FOR THEM TO GATHER AND HOLD THEIR EVENTS. ESPECIALLY THAT KUWAIT'S CULTURE IS VERY SOCIAL AND THAT PARTICULAR AREA MY SITE IS LOCATED AT IS MOSTLY FOR NEW YOUNG FAMILIES THAT ARE SEEKING FOR A PROMINENT NEIGHBORHOOD TO RAISE THEIR FAMILY IN.



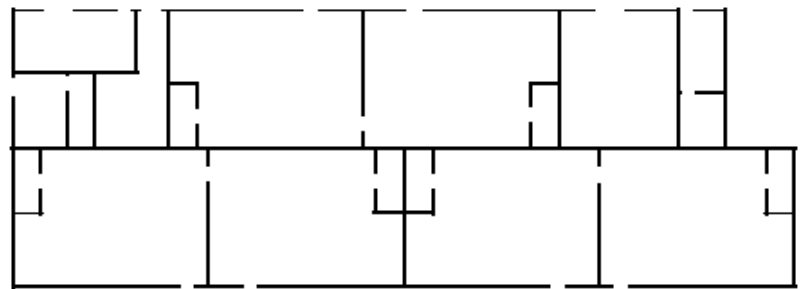
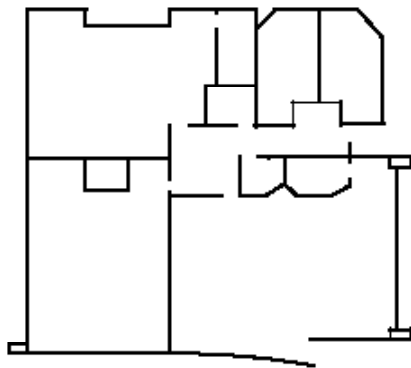
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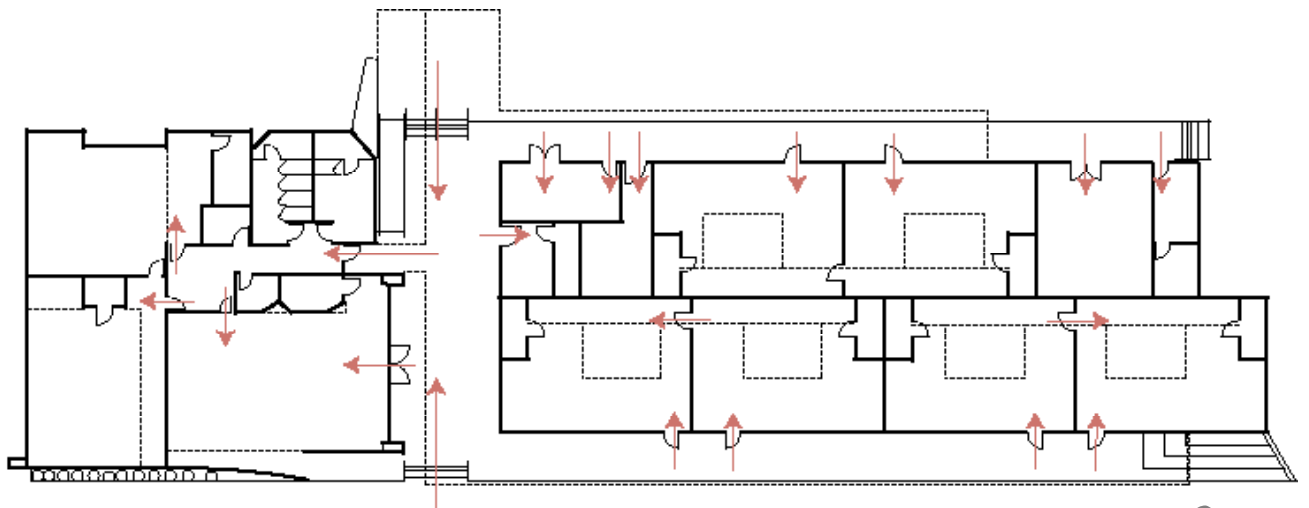




FLOOR PLAN



STRUCTURE



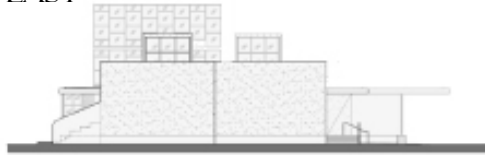
CIRCULATION TO SPACE



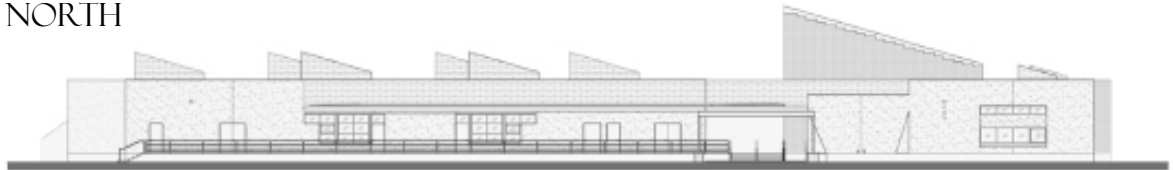
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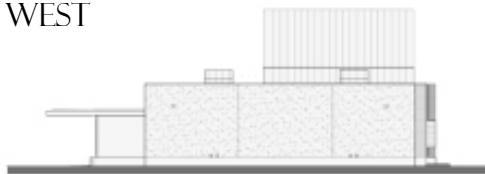
EAST



NORTH



WEST



SOUTH

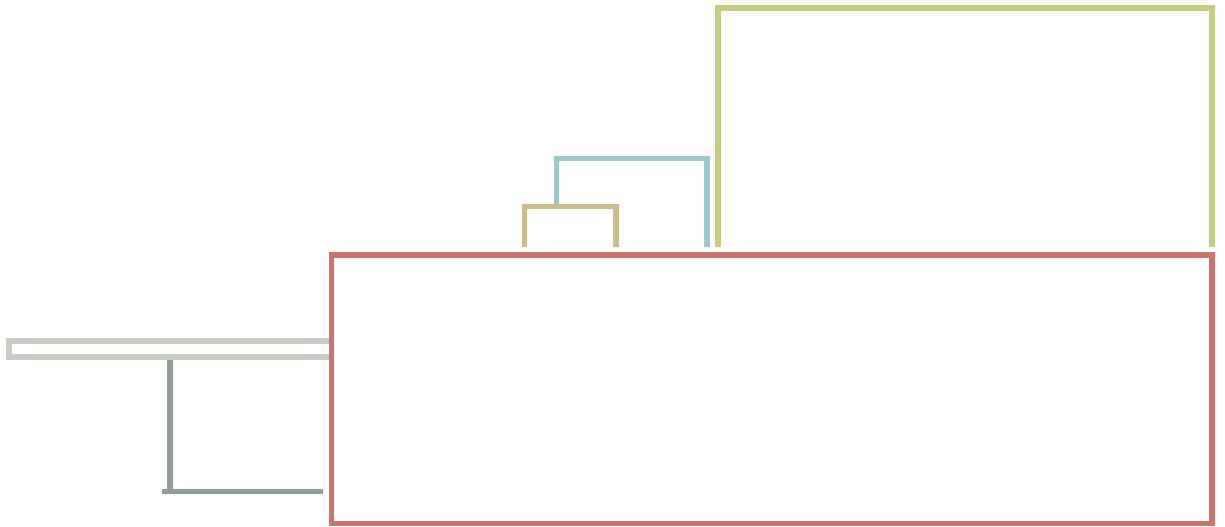


## SECTION

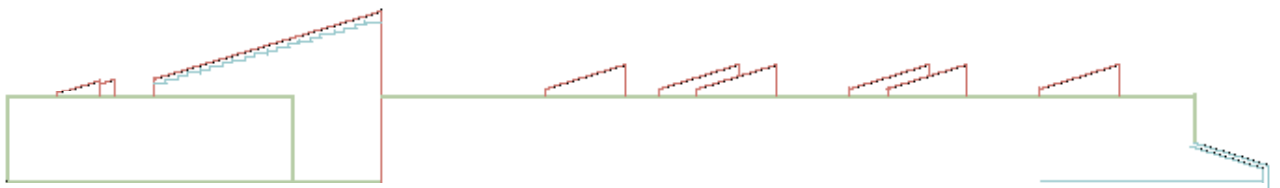




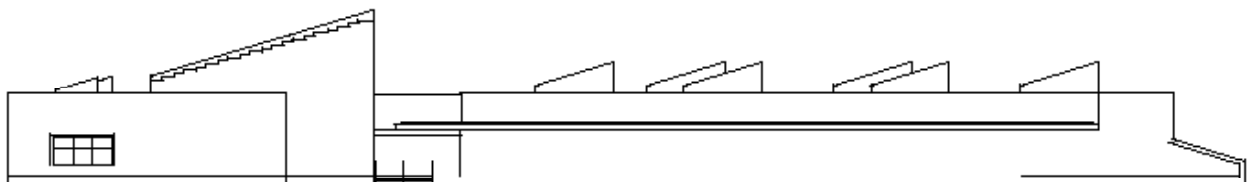




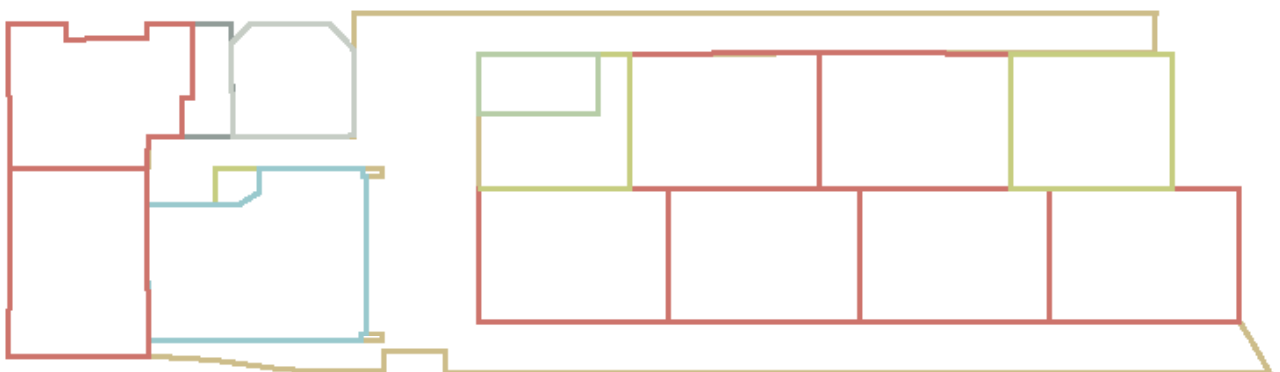
ADDITIVE AND SUBTRACTIVE



REPETITIVE TO UNIQUE



HIERARCHY

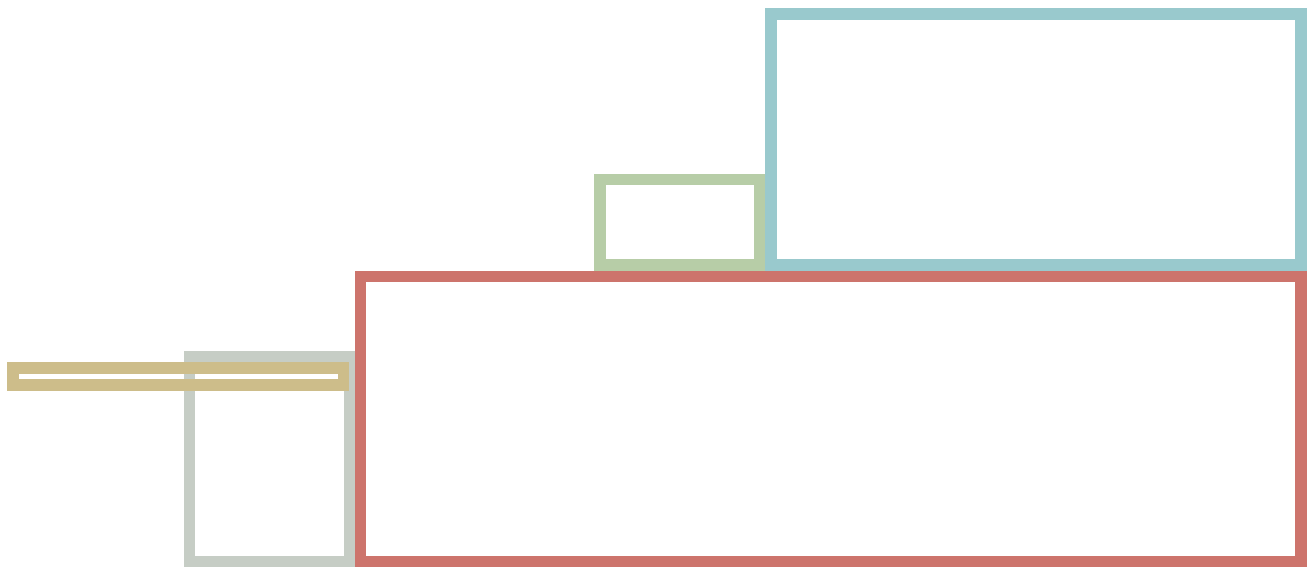


GEOMETRY

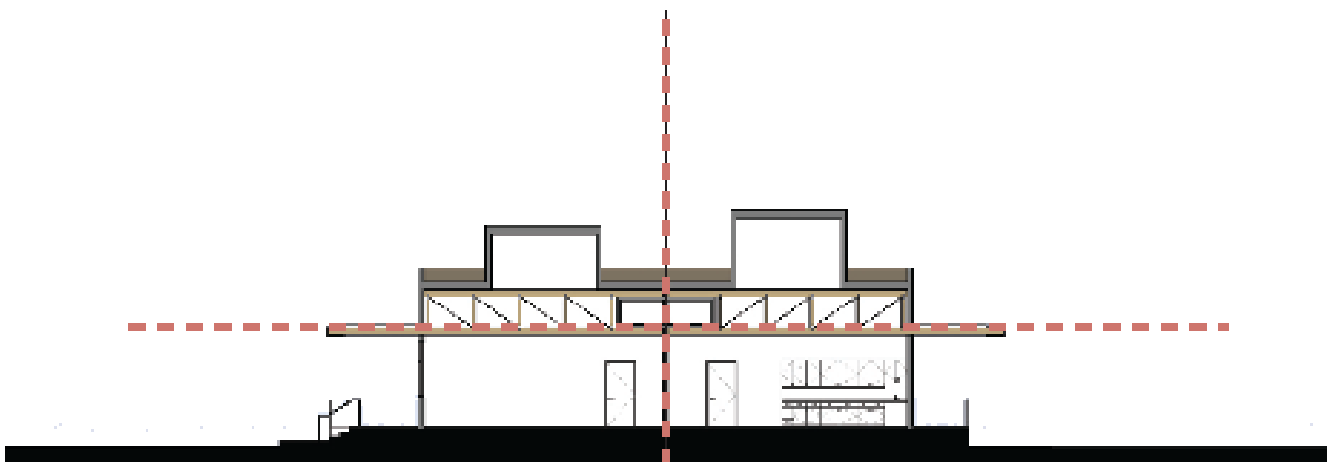




MASSING



UNIT TO WHOLE



SYMMETRY AND BALANCE





NATURAL LIGHT







# TYPOLOGICAL RESEARCH



CASE STUDY 3:

## ZERO ENERGY SCHOOL, NEW YORK

SOM





## ZERO ENERGY SCHOOL

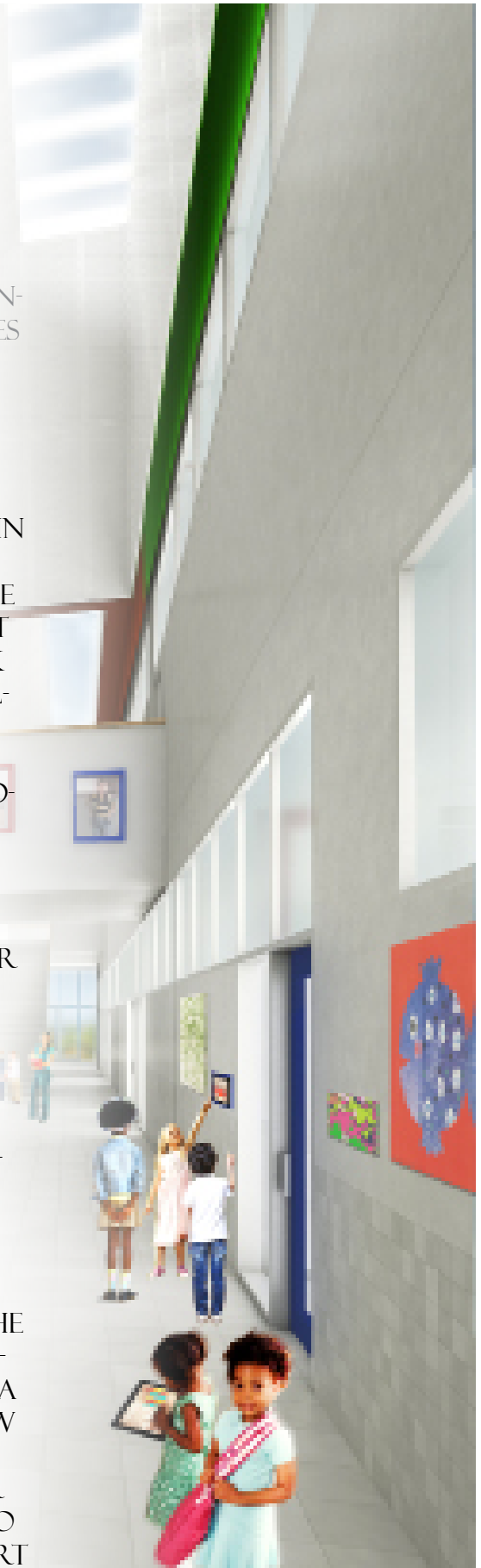
STATEN ISLAND, NY, USA

68,068 SQFT

THE PROJECT OFFERS A %50 REDUCTION IN ENERGY CONSUMPTION. A SCHOOL THAT DEFINES ENERGY EFFICIENT BUILDINGS.

WHEN WE COME TO KUWAIT WE SEE A PLENTY OF SUN ENERGY THAT HITS THE GROUND AND ONLY LITTLE IS BEING USED. SUN RAYS IS ONLY A SOURCE OF HEAT AND LIGHT FOR DAYTIME ONLY. BUT ONLY LITTLE THAT WE THINK OF SUN AS A SOURCE OF ENERGY THAT IS USED FOR THE SAME PURPOSE AFTER DARK JUST AS MUCH AS IN THE DAYTIME. PHOTOVOLTAIC'S ARE ALREADY INVENTED AND USED IN SOME PARTS OF THE WORLD. BUT KUWAIT IS NOT TAKING NATURAL ENERGY INTO CONSIDERATION FOR THE COSTS TO GET THOSE PHOTOVOLTAIC CELLS AND THE MINIMAL REDUCTION IT HAS ON ENERGY BILLS. WHEN TAKING SCHOOL IN CONSIDERATION TO THE USE OF PHOTOVOLTAIC, HOWEVER, THE REAL NUMBER OF SAVINGS ADDS UP FOR THE LONG TERM SINCE THIS SCHOOL IS A NEW SCHOOL FOR A NEW RESIDENTIAL AREA. IN REALITY, %50 PERCENT IN ENERGY REDUCTION IS A HUGE SAVINGS IN ENERGY BILLS FOR THE LONG TERM AND IT WOULD COST LESS FOR A NEW BUILDING THAN IT WOULD COST FOR AN EXISTING BUILDING.

TAKING RESPONSIBLE ENVIRONMENTAL MEASURES WILL HAVE A GREAT IMPACT ON THE STUDENTS AS WELL AS THE NEIGHBORS BUILDING AROUND THE PROPOSED SITE SINCE IT IS A NEW AREA. THE GOVERNMENT SHOULD SHOW HOW SERIOUS THEY ARE ABOUT RESPONSIBLE DECISIONS FOR FUTURE PROJECTS TO FOSTER THE IDEA OF RESPONSIBILITY. SOMEONE HAS TO BE THE START AND A SCHOOL IS A GREAT START FOR THIS MOVE.





NEIGHBORS THAT ARE ABOUT TO START BUILDING THEIR HOMES WILL ALSO LEARN THAT HEATING WATER AT HOME COULD ALSO BE AN INVESTMENT FOR THEM IN THE LONG TERM. WHEN THEY SEE IT ON BUILDINGS AROUND THEY WILL KNOW THAT IT IS AN OPTION THAT HAS NOT BEEN VISIBLE TO THEM BEFORE. MY PROJECT TALKS ABOUT FOSTERING RESPONSIBLE BEHAVIOR, IF SCHOOL DOES NOT FOSTER THAT IN STUDENTS THEN WHERE COULD WE START?

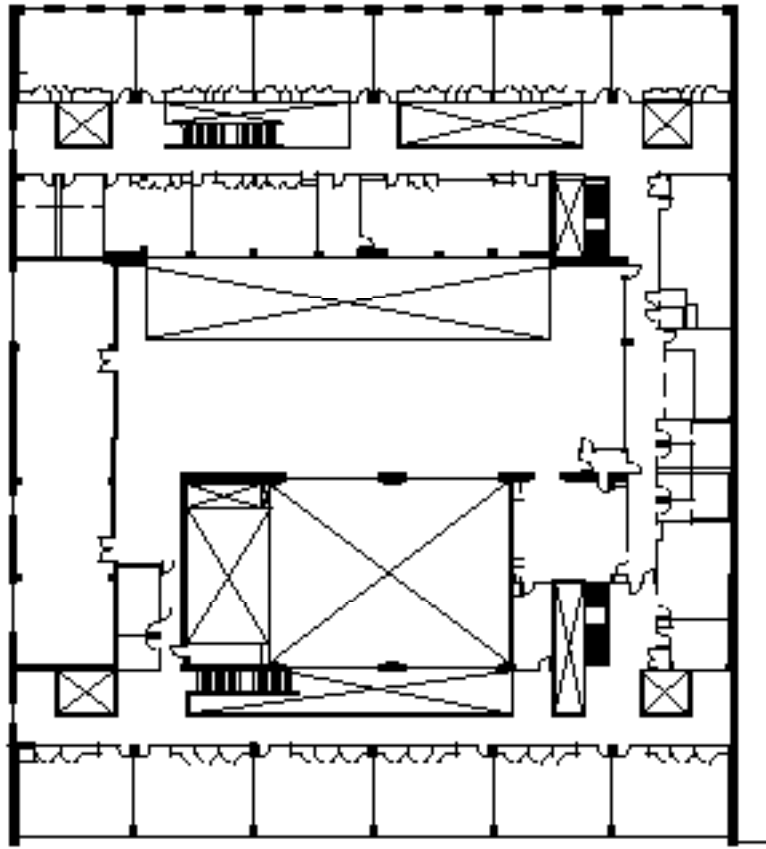
THE ZERO ENERGY SCHOOL OFFERS A GREAT DESIGN SOLUTION OF HOW TO SHAPE A SCHOOL BUILDING TO MAXIMIZE THE USE OF SUNLIGHT TO USE ON PHOTO-VOLTAIC ARRAYS ON THE ROOF. A DESIGN SOLUTION FOR MAXIMUM SUNLIGHT FOR PHOTOVOLTAIC IS VERY CRUCIAL IN ORIENTATION OF THE BUILDING. THE BUILDING MUST BE PREPARED FOR AS MUCH PHOTO-VOLTAIC ARRAYS AS POSSIBLE FOR MAXIMUM BENEFITS. TO

DO THAT THE BUILDINGS ORIENTATION MUST BE STUDIED CAREFULLY AND THE ZERO ENERGY SCHOOL OFFERED A GREAT DEAL OF ORIENTATION AND MASSING TO TAKE ADVANTAGE OF MOST SUNLIGHT AVAILABLE TO THE BUILDINGS.

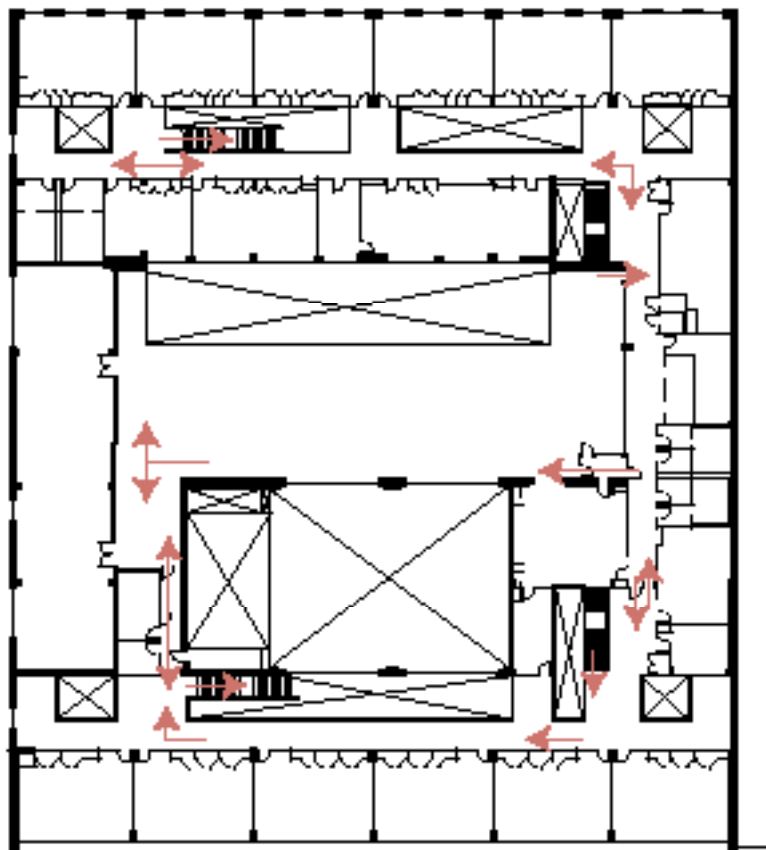
EXCELLENT SOLUTIONS WERE ALSO CONSIDERED IN THE CONSTRUCTION OF THE WALLS AT ZERO ENERGY SCHOOL FOR BEST THERMAL INSULATION AND REDUCED GLOBAL WARMING EMISSIONS. THE CONTENTS OF A BUILDING'S ENVELOPE ALSO PLAY A MAJOR ROLE IN KUWAIT'S OVER HEATED WEATHER DURING THE SUMMER. INDOORS ARE WELL INSULATED IN KUWAIT BUT LITTLE MEASURES WERE TAKEN IN THE CONSUMPTION OF THE MATERIALS. WE USE MUCH FOR MUCH, OUR NEXT USE SHOULD BE USING LESS FOR JUST AS MUCH. AND THAT IS WHAT MY PROPOSAL WILL HOPEFULLY ACCOMPLISH AFTER THE STUDY OF ZERO ENERGY SCHOOL.





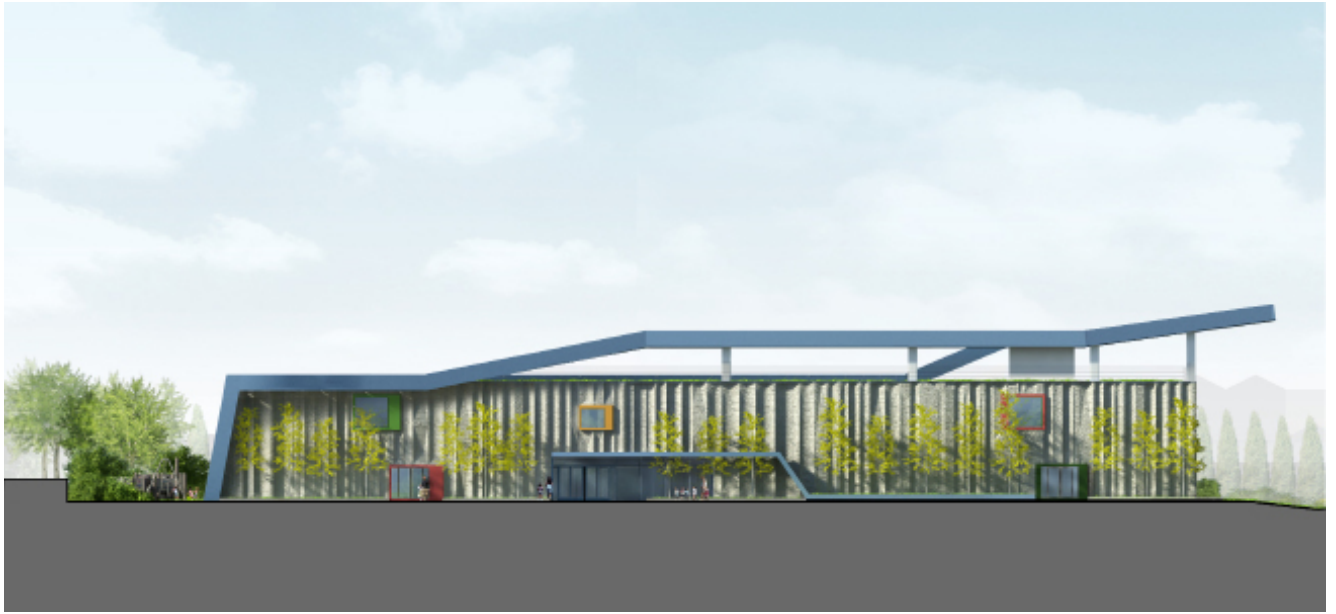


FLOOR PLAN

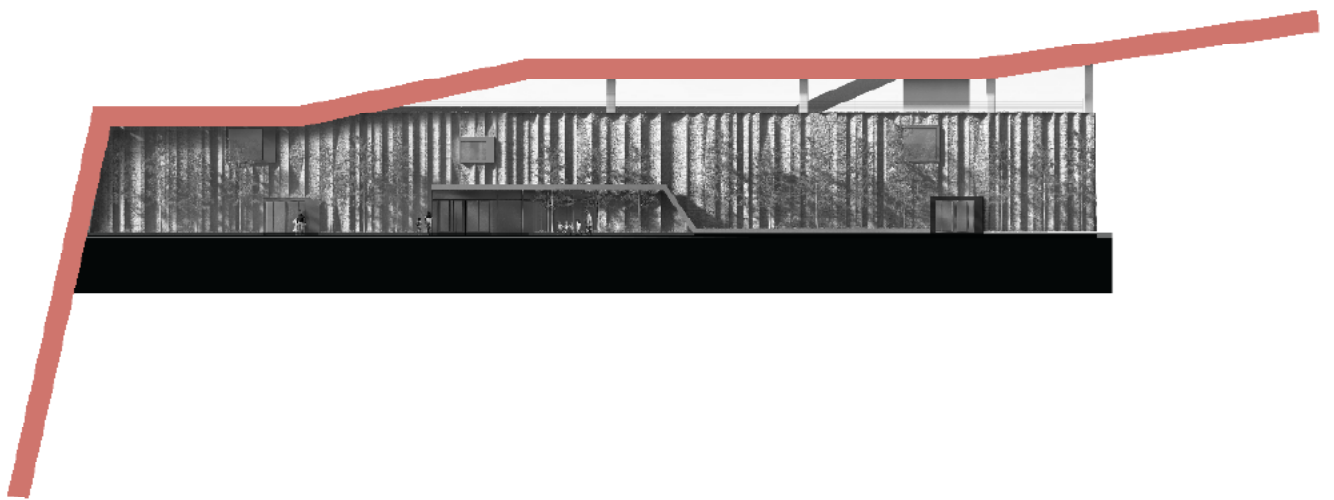


CIRCULATION TO SPACE

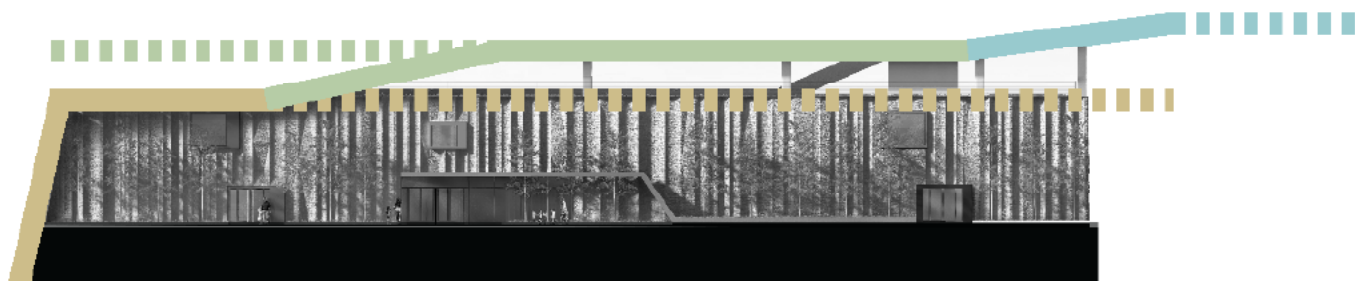




ELEVATION



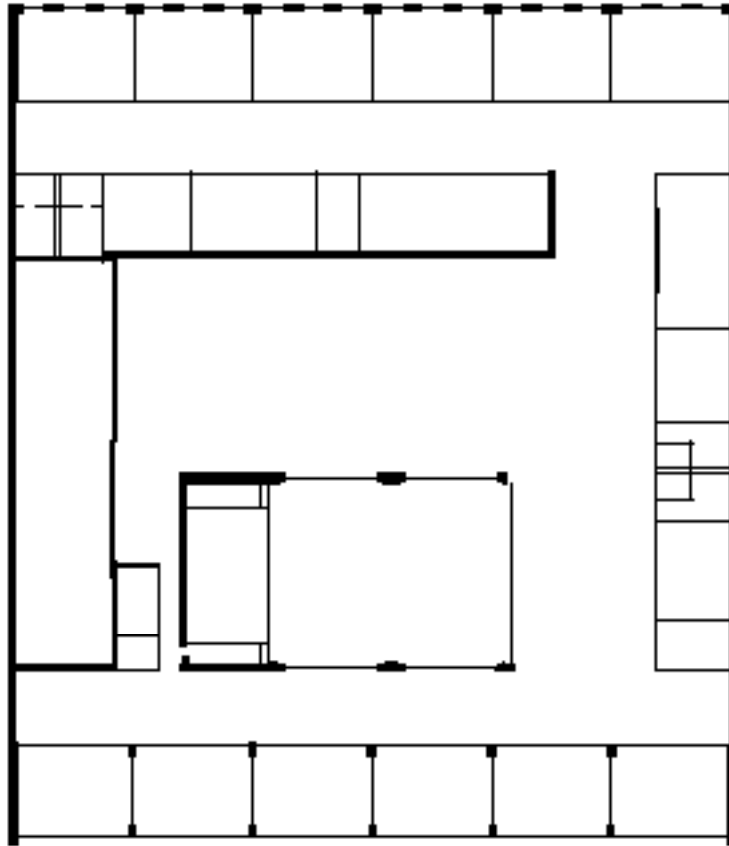
HIERARCHY



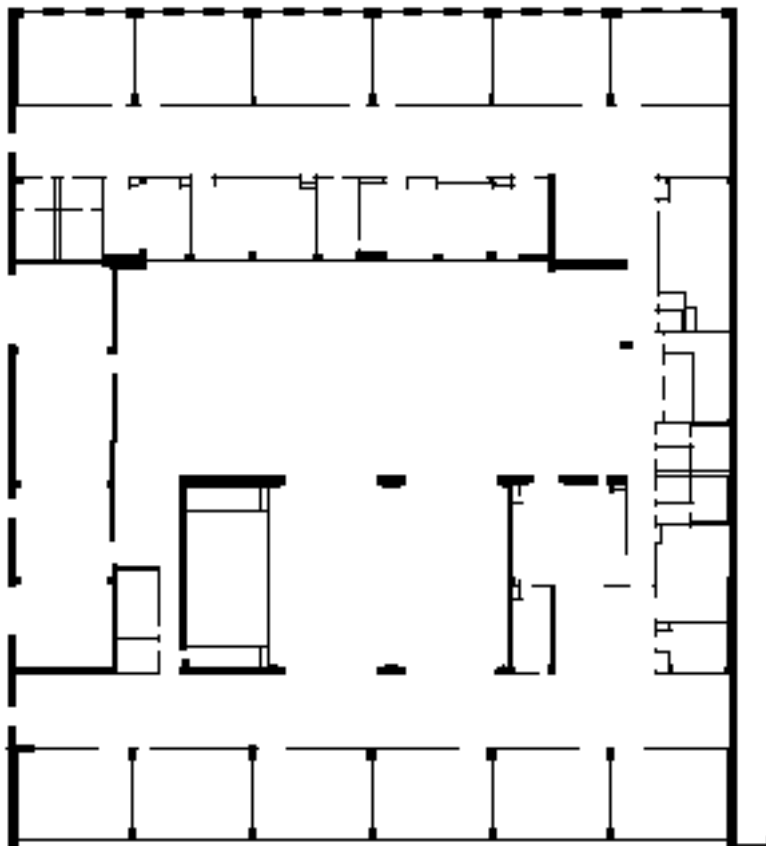
ADDITIVE AND SUBTRACTIVE







GEOMETRY



STRUCTURE



# TYPOLOGICAL RESEARCH

THE PURPOSE OF THE RESEARCH FOR THIS PROJECT WAS NARROWED TO SOME ISSUES WHICH MOST PROJECTS IN THE REGION OF MY SITE EXPERIENCE. WEATHER RELATED ISSUES, MATERIAL ABUSE, POOR DESIGN SOLUTIONS THAT CORRELATE TO THE SITE CONTEXT, AND NOT TAKING ADVANTAGE OF THE ALTERNATIVE RESOURCES THAT ARE AVAILABLE IN THE REGION. WEATHER RELATED DESIGN PROBLEMS HAS BY FAR TOPPED THE LIST OF THE NECESSITIES FOR DESIGN SOLUTIONS. MATERIAL ABUSE CAME NEXT IN THE NEEDS FOR CREATIVE SOLUTIONS TO MINIMIZE THE USE OF MATERIALS AND USE THEM EFFICIENTLY. LAST BUT NOT LEAST WAS THE USE OF ALTERNATIVES AS SOURCES OF ENERGY.

## SUMMARY

THE CASE STUDIES HAVE A GREAT IMPACT ON THE THEORETICAL PREMISE OF MY PROJECT IN-TERMS OF AT WHAT LEVEL I SHOULD APPROACH THE DESIGN PROBLEM AND HOW FAR I CAN GO IF THE DESIGN SOLUTION BECOMES A SUCCESSFUL ONE. THE CASE STUDIES ARE/WERE PROJECT THAT WERE CAREFULLY STUDIED BY EXPERIENCES ARCHITECTS AND EXPERTS IN THE FIELD. I CAN IMAGINE GOING VERY FAR WITH MY DESIGN SOLUTION BUT THOSE CASE STUDIES BRING TO MY ATTENTION REALITY AND THE LEVEL OF SUCCESS THEY WERE.

HOWEVER, THE SOLUTIONS THAT WERE AVAILABLE IN THE CASE STUDIES WERE SPECIFIC TO CULTURES AND TRADITIONS THAT ARE VERY DIFFERENT FROM WHERE MY SITE IS LOCATED. ALTHOUGH THE FUNCTIONAL ASPECTS OF THE PROJECTS



STUDIED SHARE COMMON GROUNDS SINCE THEY ARE MEANT FOR KIDS AND KIDS ALMOST RESPOND SIMILARLY AROUND THE WORLD AND ALMOST IN ALL CULTURES.

THE DURANES, FOR INSTANCE, HAS A GREAT FOCUS ON IN-DOOR HIGH-QUALITY ENVIRONMENT AND OFFERS SOLUTIONS TO COMMON PROBLEMS THAT SOME SCHOOLS SUFFER FROM, LACK OF ACOUSTICAL DESIGN AND PASSIVE SOLAR ENERGY USE.

THE DURANES CASE STUDY OFFERS GREAT SOLUTIONS FOR THE MOST COMPLEX DESIGN PROBLEM WE HAVE IN KUWAIT.

WHEN WE COME TO SPATIAL USE FOR KIDS MOST EXPERTS IN THE FIELD OF EDUCATION SPEAK UNIVERSALLY FOR KIDS ALL AROUND THE WORLD. WE MAY DISAGREE ON THE SPATIAL USE FOR MATURE OLDER KIDS THAT ARE OLDER THAN 10 YEARS BUT ELEMENTARY SCHOOL KIDS USUALLY RESPOND SIMILARLY TO SPACES.

SOME TECHNICAL ISSUES MAY BECOME DIFFERENT FOR THE SEVERITY OF WEATHER DIFFERENCE IN SOME PLACES FROM WHERE MY SITE IS LOCATED, HOWEVER, THESE CASE STUDIES OFFER AN APPROACH TO A DESIGN SOLUTION NOT THE FULL SOLUTION THAT IS NEEDED FOR MY DESIGN PROBLEM.

THE BARCELONA SCHOOL USES RECYCLED CONSTRUCTION MATERIALS, HIGH-QUALITY THERMAL INSULATION; HEATING AND LIGHTING FIXTURES THAT ARE ENERGY ADEQUATE; FRESH AIR SUPPLY AND AIR EXCHANGES; PASSIVE SOLAR LIGHTING IN ALL ROOMS TOGETHER WITH MULTIPLE LIGHTING LEVELS THAT WORK EFFECTIVELY WITH NATURAL DAY-LIGHTING. WHICH ANSWERS THE QUESTION OF DESIGN IN WHICH HOW TO USE MATERIALS EFFICIENTLY AND CREATIVELY.



# HISTORICAL CONTEXT





# HISTORICAL CONTEXT

THE STATE OF KUWAIT IS LOCATED IN THE NORTH-EAST OF THE ARABIAN PENINSULA IN WESTERN ASIA. KUWAIT IS BORDERED BY SAUDI ARABIA TO THE SOUTH AND IRAQ TO THE NORTH. KUWAIT HAD INHERITED ITS NAME FROM THE AKWAT THE PLURAL OF KUT, WHICH MEANS A “FORTRESS BUILT NEAR WATER”. KUWAIT WAS A PORT OF TRADE BETWEEN MESOPOTAMIA AND INDIA UP UNTIL THE 19TH CENTURY. THEN KUWAIT BECAME UNDER THE INFLUENCE OF THE OTTOMAN EMPIRE FOR YEARS TILL THE WORLD WAR I. KUWAIT THEN EMERGED AS AN INDEPENDENT COUNTRY UNDER THE PROTECTION OF THE BRITISH EMPIRE. IN THE LATE 1930’S, KUWAIT HAD OPENED UP TO PROSPERITY IN ECONOMY AND BECAME ECONOMICALLY SPOILED BY THE DISCOVERY OF THE OIL FIELDS WITH THE HELP OF THE BRITISH. (KUWAIT, 2012)

IN 1961 KUWAIT BECAME AN INDEPENDENT COUNTRY FROM THE UK. THEREAFTER, THE OIL INDUSTRY CONTRIBUTED SUBSTANTIALLY IN THE ECONOMY OF KUWAIT. KUWAIT NOW HOLDS THE WORLD’S FIFTH LARGEST OIL RESERVES. KUWAIT NOW IS THE ACCOUNTED AS THE ELEVENTH RICHEST COUNTRY IN THE WORLD PER CAPITA. (KUWAIT, 2012)

IN AUGUST 1990 KUWAIT WAS INVADED BY ITS NEIGHBORING COUNTRY FROM THE NORTH IRAQ, KUWAIT WAS OCCUPIED BY THE IRAQIS FOR EIGHT MONTHS. A US MILITARY INTERVENTION WAS REQUESTED BY THE KUWAITI GOVERNMENT TO BRING THE IRAQI OCCUPATION TO AN END. (KUWAIT, 2012)



AROUND 700 OIL WELLS IN KUWAIT WERE SET TO FIRE BY THE IRAQ ARMY BEFORE THEY LEFT AND RESULTED IN A MAJOR ENVIRONMENTAL AND ECONOMIC DAMAGE. THE INFRASTRUCTURE HAD TO BE REBUILT FOR HOW BAD THE DAMAGE WAS IN IT. AFTER THE GULF WAR IN 1990 KUWAIT WAS GOING THROUGH RECONSTRUCTION FOR DAMAGES CAUSED BY THE IRAQI MILITARY NOT ONLY FOR DAMAGED OIL WELLS AND INFRASTRUCTURE BUT ALSO THE GOVERNMENT BUILDINGS AND PRIVATE RESIDENTIAL BUILDINGS AS WELL AS COMMERCIAL BUILDINGS. THE GOVERNMENT OF IRAQ IS STILL PAYING FOR THE DAMAGES CAUSED AND GOODS THAT WERE TAKEN BACK THEN. THE WAR CAUSED DAMAGE NOT ONLY ECONOMICALLY BUT ALSO HAS AFFECTED THE HISTORY OF THE COUNTRY AND DESTROYED THE MONUMENTS THAT DELIVER HISTORY FROM DECADES, FROM THE ORIGINS OF KUWAIT'S TRADE BOATS TO SCULPTURES AND MONUMENTS THAT REPRESENT THE SIMPLICITY OF LIFE BEFORE THE DISCOVERY OF THE OIL FIELDS. (KUWAIT, 2012)

UP UNTIL LATE 1990'S MOST KUWAIT RESIDENTS WERE RESTRICTED AROUND THE CAPITAL CITY OF KUWAIT. AS A KUWAITI TRADITION, EVERY SPRING AND WINTER SEASON THE KUWAITIS GO CAMPING IN THE DESERT TO SPEND TIME WITH THE FAMILY TOGETHER. EVERY FAMILY HAS ITS OWN CAMPING TENT AND ASSEMBLE THE TENTS AROUND A BONFIRE. THERE ARE ACTIVITIES FOR ALL AGES AROUND THE CLOCK TO DO TOGETHER. BUT AFTER THE INTERVENTION OF THE US WHERE IT RESULTED IN THE FORCE LEAVE OF THE IRAQI TROOPS, THE IRAQI TROOPS PLANTED BOMBS IN THE KUWAITI DESERTS RANDOMLY SO THE KUWAITIS SUFFER FROM NOT ONLY NOT GOING CAMPING IN THE SPRINGS AND WINTERS BUT ALSO WERE PREVENTED FROM COLLECTING DESERT TRUFFLES THAT



ONLY GROW IN THE MEDITERRANEAN AND MIDDLE EASTERN REGION DESERTS CALLED “FAGEI”. PEOPLE IN KUWAIT WERE TERRIFIED FROM THE WAR BOMBINGS AND KILLINGS OF THEIR FAMILY MEMBERS AND WERE SCARED TO WATCH THAT HAPPEN AGAIN. (AL-AIDAROUS, 2002) SPECIALIZED BOMBS EXPERTS WERE HIRED BY THE KUWAITI MINISTRY OF DEFENSE TO EXTRACT THE BOMBS OUT OF THE KUWAITI DESERTS OR BLOW THEM AWAY FROM THE CITIZENS. THOSE AREAS THAT WERE PLANTED WITH BOMBS EXTENDED ALL THE WAY TO THE AREA WERE MY SITE IS LOCATED. MY SITE’S AREA WAS ONE OF THE FIRST AREAS THAT WAS TAKEN CARE OF IN-TERMS OF CLEARING OF BOMBS AND WAR REMAINS. PEOPLE THEN STARTED GOING TO AS FAR AS MY SITE’S LOCATION, JANOUB AL-SURRA “ALSIDDIQ”. JUST AFTER THE MILLENNIUM RESIDENTIAL AND GOVERNMENTAL BUILDINGS STARTED TO BE EXECUTED IN THAT AREA. (AL-AIDAROUS, 2002)

JANOUB AL-SURRA IS CONSIDERED ONE OF THE NEWEST AREAS IN KUWAIT UNTIL NOW, EVEN AFTER MOVING TO NEWER AND FURTHER AREAS WERE THE DEBRIS OF WAR WAS CLEANED UP AFTER THE WAR. ALSIDDIQ IS THE LAST AREA IN JANOUB AL-SURRA TO BUILT AFTER BUILDING UP AND PREPARING THE AREA FOR RESIDENTS. ALSIDDIQ NOW IS EQUIPPED WITH NEW AND UP-TO-DATE HYDRO SYSTEMS, ELECTRICAL CABLES, PHONE AND INTERNET CABLES,... ETC. THE AREA HAS AN INFRASTRUCTURE THAT IS READY TO TAKE A LOAD OF RESIDENTS THAT WILL COME WITH MORE NEEDS THAN THE OLDER GENERATIONS IN-TERMS OF ELECTRICAL USE, INTERNET, CELL PHONE TOWERS AND WHATEVER A STUDENT MIGHT NEED AT HOME. JANOUB AL-SURRA IS EXPERIENCING GROWTH IN THE YOUNGER POPULATION AT A HIGHER RATE THAN ANY OTHER AREA IN KUWAIT; AND MOST THOSE YOUNGER GENERATION PEOPLE ARE COLLEGE OR NEW GRADUATE STUDENTS WHOM ARE STARTING THEIR



NEW LIFE WITH THEIR FAMILY. JANOUB AL-SURRA IS EXPECTING NEW DEVELOPMENT AND POTENTIALLY CREATIVE SOLUTIONS AND USE OF ENERGY SOURCES SINCE IT IS THE FACE OF DEVELOPING KUWAIT. HOWEVER, SINCE THE SITE EXPERIENCED HISTORICAL EVENTS THROUGHOUT THE DECADES THAT ITS OWN RESIDENTS HAVE WATCHED WITH THEIR OWN EYES, THE SITE IS ALSO EXPECTING A MARK OF ITS HISTORY TO STAND FOR THE GENERATIONS THAT WILL FOLLOW. (AL-AIDAROUS, 2002)

GOING BACK TO THE LIFE-STYLE OF KUWAITI CITIZENS, KUWAITIS ARE INFLUENCED BY THE ISLAMIC AND ARAB CULTURE IN THEIR LIFE-STYLE, ARCHITECTURE, MUSIC AND ATTIRE. SOCIAL GATHERING IS A PROMINENT ACTIVITY THAT THE KUWAITI PEOPLE DO VERY OFTEN. THE ARCHITECTURE, FOR INSTANCE, RESEMBLES THAT BY CONSTRUCTING A RECEPTION ROOM ATTENDED BY FAMILY MEMBERS AND CLOSE FRIENDS. NOT TOO LONG AGO SOCIAL GATHERING ROOMS, WHICH ARE TERMED “DIWANIYA” IN KUWAIT, WERE USED PARTICULARLY FOR MEN ONLY. WHEREAS, OVER THE PAST FEW YEARS WOMEN BECAME A PART OF THE SOCIAL GATHERING ACTIVITIES BUT SEPARATELY, MEN IN THEIR OWN ROOM AND WOMEN IN THEIRS, IN RESPONSE TO THE ISLAMIC TRADITIONS INFLUENCE ON THE KUWAITI CULTURE. (AL-AIDAROUS, 2002)

ARCHITECTURALLY SPEAKING, KUWAIT’S ARCHITECTURE IS INSPIRED SUBSTANTIALLY BY THE ISLAMIC ARCHITECTURE. KUWAIT’S ARCHITECTURE IS UNIQUE TO KUWAIT. THE ORIENTATION OF THE RESIDENTIAL BUILDINGS ESPECIALLY ARE DESIGNED IN A WAY THAT CORRESPONDS TO THE KUWAITI CULTURE. KUWAITI HOMES ARE CONSTRUCTED WITH A LIVING ROOM THAT IS CENTER TO THE HOUSE AND ALL OTHER ROOMS SURROUND THE LIVING





ROOM LEAVING ONE VESTIBULE IN THE LIVING ROOM THAT CONNECTS THE LIVING ROOM TO THE “FEREEJ”, THE NEIGHBORHOOD ROAD. USUALLY IN KUWAITI FAMILY HOMES WHEN TWO OR MORE FAMILY MEMBERS ARE WALL-TO-WALL NEIGHBORS THEY HAVE A SHARING DOOR THAT ALLOWS THEM TO HAVE ACCESS TO EACH OTHER WITHOUT HAVING TO GO THROUGH THE MAIN ENTRANCE DOOR, THIS DOOR IS CALLED “ALFIRYA”. (KUWAIT, 2012)

EVENTUALLY WITH ALL THE CHANGES AND INFLUENCES THAT WERE BROUGHT FROM WESTERN COUNTRIES AND EUROPEAN COUNTRIES THE ARCHITECTURE OF KUWAIT HAS CHANGED TO RESPOND TO THE NEEDS OF THE CULTURE BUT YET STILL IS UNIQUE TO KUWAIT. (AL-AIDAROUS, 2002)

MANY KUWAITI STUDENTS HAVE TRAVELLED TO STUDY OVERSEAS AFTER GRADUATING HIGH-SCHOOL TO A BETTER STUDYING ENVIRONMENTS, FACILITIES AND EDUCATION MATERIALS TO COME BACK TO KUWAIT TO BECOME PART OF THE CONTRIBUTION OF THE COUNTRY’S DEVELOPMENT. HOWEVER, SPENDING COLLEGE/UNIVERSITY TIME OVERSEAS IS ENOUGH TO SOMEHOW MANIPULATE OR HAVE A SLIGHT EFFECT ON THE STUDENTS’ LIFE-STYLE. AS A RESULT, STUDENTS AFTER GRADUATION AND COMING BACK TO KUWAIT TEND TO LIVE THEIR LIFE-STYLE, WHICH THEY HAVE ADAPTED TO OVERSEAS, IN KUWAIT. HENCE, ARCHITECTURALLY TALKING THE ORIENTATION OF THE KUWAITI HOUSES WILL RESPOND TO THE NEEDS OF ITS FAMILY MEMBERS. FOR EXAMPLE, STUDENTS UPON ARRIVAL BACK IN KUWAIT USUALLY ASK FOR A ROOM THAT IS SEPARATED FROM THE LIVING ROOM AND HAS ITS OWN ACCESS FROM OUTSIDE THE HOUSE SO THEY CAN GO IN AND OUT OF THE HOUSE WITHOUT BEING INTERRUPTED BY THEIR FAMILY MEMBERS.



ALTHOUGH THE LIFE-STYLE AND THE ARCHITECTURE OF THE KUWAITIS HAVE SWITCHED GEARS TO EUROPEAN/WESTERNIZED CULTURES IN SOME ASPECTS. THE CLIMATE TOO HAS CHANGED OVER THE PAST YEARS IN RESPONSE TO THE CHANGES THAT ARE OCCURRING UNDER THE KUWAITI SKIES. MORE CARS, INDUSTRIES, ASPHALT,,,ETC ARE BEING USED AFTER THE ECONOMICAL GROWTH THAT IS INCLINING YEAR AFTER YEAR SINCE THE DISCOVERY OF THE OIL FIELDS. THAT HAS BEEN THE CLAIM FOR YEARS IN KUWAIT AS FOR WHY KUWAIT IS GETTING WARMER AND WARMER EVERY YEAR. UNTIL THE WEATHER EXPERT, ESSA RAMADAN A METEOROLOGIST SUPERINTENDENT AT THE METEOROLOGICAL DEPARTMENT FOR CIVIL AVIATION AT KUWAIT INTERNATIONAL AIRPORT ARGUED THAT THE TEMPERATURE IS IN RISE BY ALMOST 2 CENTIGRADE SINCE 1957 NOT DUE TO URBANIZATION AS MOST CLIMATOLOGIC EXPERTS ARGUE IN OTHER STATIONS. SOME OF THE MOST DOMINANT TIES TO THIS CLAIM ARE DUE TO THE SHARP DROP IN RAINFALL IN KUWAIT. (SAJJAD, 2012)

DROP IN RAINFALL TOGETHER WITH THE MILITARY TANKS THAT ARE MOVING IN THE DESERTS OF KUWAIT AND THE SURROUNDING COUNTRIES SAUDI ARABIA AND IRAQ HAVE CAUSED LOOSE SAND IN THE DESERTS. SAND DUNES ARE IN THE RISE EVERY YEAR WITH ALMOST EVERY WIND BLOW THAT HITS THE DESERTS OF THE THREE COUNTRIES CAUSING SAND STORMS. SOME SAND STORMS IN THE PAST FEW YEARS HAVE BEEN VERY AGGRESSIVE THAT THE VISIBILITY WAS ABSOLUTELY 0% FOR SOME TIME AND BELOW 50% FOR LONG PERIODS EVEN MONTHS IN THE SUMMERS AND FALLS IN KUWAIT. (SAJJAD, 2012)



# PROJECT GOALS

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WHEN THE TIME CAME TO CHOOSE THE THESIS TOPIC IT WAS PROBABLY THE MOST DECISION I FELT CONFIDENT ABOUT FOR THE ENTIRE TIME I SPENT IN THE ARCHITECTURE SCHOOL. I WAS VERY SURE THAT THE TOPIC I WILL WORK ON WILL BE THE MOST THAT RELATES TO ME PERSONALLY AND TO MY PATH IN THE ARCHITECTURE FIELD. THE FIRST QUESTION I ASKED MYSELF WAS, WHAT DO YOU CARE ABOUT MOST? THEN I ASKED MYSELF, WHY IS IT SO IMPORTANT TO YOU THAT YOU WANT TO DO YOUR THESIS PROJECT ON IT? THEN I FOLLOWED IT WITH A VERY CRITICAL QUESTION THAT WILL MAKE ME DECIDE WHETHER THE TOPIC I CHOOSE IS WORTH FULL OR NOT, WOULD IT BE SOMETHING THAT YOU WILL BE DOING OR AT LEAST ALONG YOUR CAREER PATH IN THE FUTURE?

THOSE QUESTIONS MADE UP MY MIND AND BUILT CONFIDENCE TOWARDS MY DECISION ABOUT WHAT TO DO ON MY THESIS. SINCE I HAVE THIS UNIQUE OPPORTUNITY TO STUDY OVERSEAS IN THE STATES, THOUSANDS MILES AWAY FROM HOME, KUWAIT, WHY NOT TEST MY UNDERSTANDING OF ARCHITECTURE WITH SOMETHING I LOVE TALKING ABOUT AND DOING. I HAVE ALWAYS THOUGHT ABOUT RESPONSIBILITY IN-TERMS OF ETHICAL THINKING AND HOW CULTURES HAVE THEIR OWN LOGIC ON ETHICAL THINKING AND RESPONSIBLE BEHAVIOR. WE, ALL CULTURES, CARE ABOUT THE ENVIRONMENT AND WANT TO LIVE IN A GREEN WORLD. BUT WE HAVE DIFFERENT MEASURES OF TAKING RESPONSIBILITY TO



ACCOUNT AND WE ALL HAVE DIFFERENT SETS OF MORALS AND VALUES. I TEND TO, OR AT LEAST TRY TO, FIND THE COMMON GROUND BETWEEN TWO ISSUES. IN OTHER WORDS, WHAT IS RESPONSIBLE BEHAVIOR TO THE AMERICAN CULTURE AND WHAT IS IT TO THE KUWAITI CULTURE? CAN ARCHITECTURE BE A COMMON GROUND FOR UNDERSTANDING RESPONSIBILITY TOWARDS THE ENVIRONMENT? I'M HOPING THAT MY THESIS PROJECT ANSWERS AND/OR TESTS THOSE QUESTIONS AS WELL AS MY UNDERSTANDING OF ARCHITECTURE AND HOW TO DELIVER A MESSAGE THROUGH ARCHITECTURE. I BELIEVE THAT I AM PASSED THE POINT OF DESIGN AND PUTTING A PROJECT TOGETHER. AT THIS LEVEL, NOW IS THE TIME FOR ME TO BECOME AN ETHICAL RESPONSIBLE DESIGNER AND COME UP WITH A THEORY ON HOW TO DESIGN A DECENT LOOKING BUILDING THAT IS ENVIRONMENTALLY FRIENDLY AND INSTRUCTIONAL TO WHAT IT STANDS FOR TO ALL AGES BUT CHILDREN IN PARTICULAR.

THIS PROJECT WILL HOPEFULLY BE BENEFICIAL TO ME CAREER-WISE SINCE I'M THINKING TO PRACTICE ARCHITECTURE IN KUWAIT. I'M HOPING THAT THIS PROJECT BECOMES UNIQUE OF ITS OWN. I'M VERY EXCITED ABOUT THIS PROJECT BECAUSE IT WILL TEST MY UNDERSTANDING OF ARCHITECTURE IN THE REAL-WORLD AND IT IS RELATED TO ME PERSONALLY IN-TERMS OF CLIMATE, CULTURE, AND EDUCATION. I'M BORN AND RAISED IN KUWAIT SO I KNOW WHAT IT MEANS TO BE IN KUWAIT'S CLIMATE, BUT THE QUESTION IS AM I READY TO DEAL WITH ISSUES SUCH AS WEATHER AND CULTURE YET?





# SITE ANALYSIS

- NARRATIVE
- CHARACTERISTICS
- CLIMATE DATA
- SPACE ALLOCATION

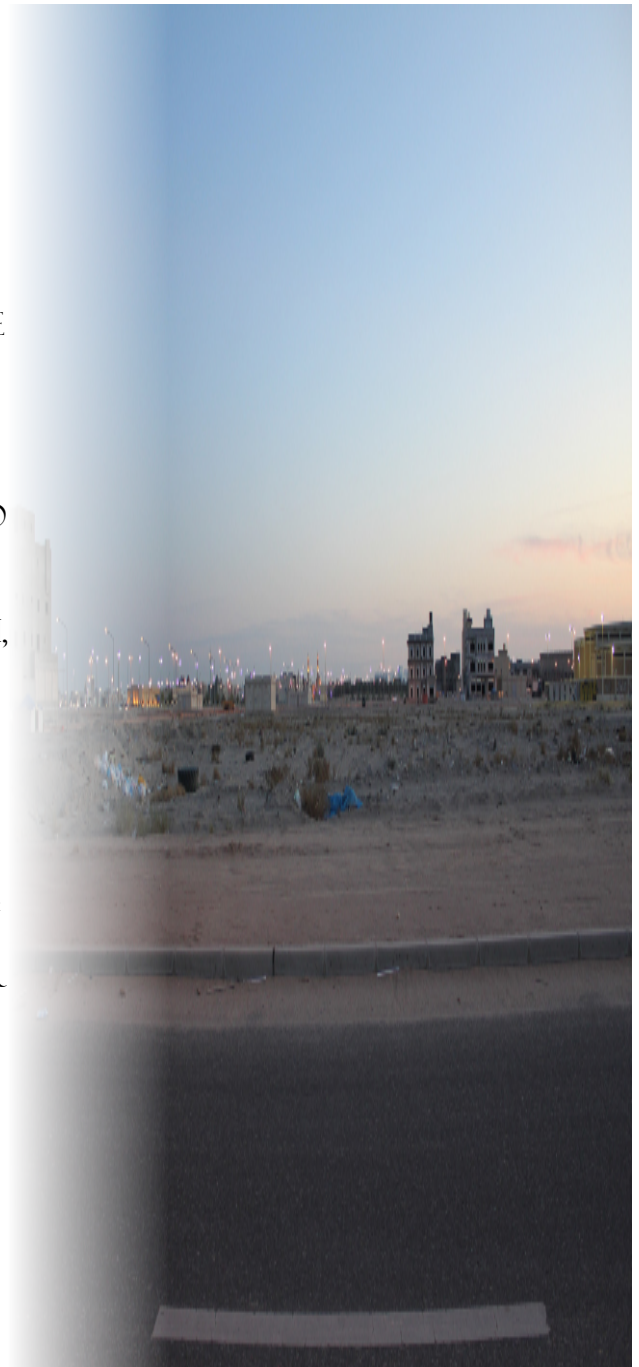


## NARRATIVE SITE ANALYSIS

### VIEWS OR VISTAS:

THE SITE LOCATION FOR THIS PROJECT HAS MULTIPLE REASONS TO MAKE A PERFECT LOCATION FOR A SCHOOL. FIRST OF ALL, IT LIES ON AN EDGE OF A BLOCK THAT IS SURROUNDED BY 2 MAJOR STREET AND 2 RESIDENTIAL STREET, PLUS A ROUND-ABOUT THAT KEEPS THE TRAFFIC GOING . SECOND, THE 2 RESIDENTIAL STREETS MAKE HALF OF THE SITE'S EDGES WHICH MEANS HALF OF THE SCHOOL BUILDINGS ALREADY HAVE QUIET SIDES OF THE SITE. THE OTHER 2 STREETS, THOUGH, ARE BORDERING 2 RESIDENTIAL BLOCKS AS WELL WHICH ALSO GIVES THE SITE A QUIET ENVIRONMENT DURING SCHOOL PERIOD. THE SITE, HOWEVER, DOES NOT HAVE MUCH OF A VIEW. THOUGH, NEW RESIDENTIAL BUILDINGS ARE BEING BUILT WHICH WILL POTENTIALLY GIVE A DECENT LOOK FOR A NEW SCHOOL IN THE BLOCK.

THE SITE IS SQUARE IN SHAPE, 2 SIDES, NORTH AND EAST, ARE DIRECTLY LOOKING AT RESIDENTIAL HOUSES WITH A MINOR STREET SEPARATING THEM, AND THE OTHER 2 SIDES, WEST AND SOUTH, ARE LOOKING AT 2 BOUNDS STREETS THAT SEPARATE THE SITE FROM ALSO A RESIDENTIAL BLOCK. CURRENTLY, THE SITE IS IN THE OPEN FIELD OF DESERT SIDE. THE RESIDENTIAL BUILDINGS ARE EXPECTED TO BE COMPLETE WITHIN THE NEXT 7 YEARS. IT HAS SOME NICE FEATURES FOR NOW, IT FEELS COOLER THAN THE URBANIZED AREAS IN THE WINTER AND THE SUMMER AS WELL.







#### BUILT FEATURES:

THERE ARE CURRENTLY 3 UTILITY BUILDINGS BUILT SURROUNDING THE SITE. A ELECTRICITY GENERATORS HOUSE THAT LAYS IN THE FAR SOUTH-WEST CORNER OF THE SITE. AND 2 ALSO ELECTRICITY SUPPLY SMALLER IN SIZE RELATIVELY THAT LAY ON THE CENTRAL-NORTH OF THE SITE AND THE FAR SOUTH-EAST CORNER OF THE SITE. A FEW RESIDENTIAL BUILDINGS ARE UNDER CONSTRUCTION CURRENTLY ON THE NORTH AND EAST SIDES ACROSS THE STREET FROM THE SITE.



#### LIGHT QUALITIES:

THE SITE IS VERY BRIGHT AND WARM FOR THE AMOUNT OF SUN HITTING THE SITE'S GROUND. SO FAR, THERE IS NO BUILDINGS AROUND THE SITE THAT OBSTRUCT THE SUN FROM HITTING EVERY INCH AROUND THE SITE, HOWEVER, THE AREA IS STILL UNDER CONSTRUCTION. EVEN THOUGH THE AREA IS UNDER CONSTRUCTION LIGHT QUALITY SHOULD NOT BE EFFECTED BY ANY AMOUNT BY THE NEW BUILDINGS SINCE THE NEAREST BUILDING ACROSS THE STREET FROM THE SITE IS AT LEAST 100FT FROM THE SITE WITH THE SET-BACKS AS OF THE CITY'S ZONING CODES. HOWEVER, THERE WILL BE 2 SIDES OF THE SITE, WEST AND SOUTH, THAT WILL BE AVAILABLE FOR FUTURE PROJECTS, SINCE MY PROJECT WILL NOT TAKE OVER THE WHOLE BLOCK.



#### VEGETATION:

THE CLIMATE IN MY SITE IS DESERT DRY AND HOT AND THERE IS NO LIFE FOR VEGETATION EXCEPT FOR ONE KIND OF PLANT THAT GROWS VERY POPULARLY IN KUWAIT AND SAUDI ARABIA DESERTS, RHANTERIUM EPAPPOSUM (ARFAJ). THE ARFAJ PLANT CONSISTS OF A COMPLICATED NETWORK OF BRANCHES SCATTERED WITH SMALL THORNY LEAVES AND BRIGHT YELLOW FLOWERS ABOUT (0.59 IN) WIDE. IT IS A VERY BUSHY SHRUB APPROXIMATELY (31.5 IN) HEIGHT. THE LEAVES ARE SMALL AND NARROW, AND IN LATE SPRING IT WILL START FLOWERING (APRIL-MAY).



#### WATER:

THE SITE HAS NO SIGNS OF WATER AT ALL. VERY DRY AND FLAT ALL AROUND THE SITE, WHICH MAKES THE SITE WARMER ALL YEAR ROUND.

#### WIND:

SINCE THE SITE WAS FLAT AND IN THE OPEN WHEN VISITED, WIND BREEZE WAS PRESENT AND WAS AGGRESSIVELY HARDER THAN ANY OTHER PLACE IN THE URBAN AREAS IN THE CITY. THE WIND, HOWEVER, IS MORE AGGRESSIVE FROM THE NORTH-WEST BUT THERE ARE RESIDENTIAL BUILDINGS CURRENTLY UNDER CONSTRUCTION WHICH WILL LESSEN THE STRENGTH OF THE WINDS. THE WHOLE AREA AROUND THE SITE IS UNDER CONSTRUCTION, WIND BREEZES WILL DECREASE BY THE TIME THE BUILDINGS SURROUNDING THE SITE ARE COMPLETE.

#### HUMAN CHARACTERISTICS:

THERE WAS NO HUMAN ACTIVITY AROUND THE SITE EXCEPT FOR THE WORKERS THAT WERE IN THE CONSTRUCTION SITES SURROUNDING THE PROJECT'S SITE.

#### PEDESTRIAN TRAFFIC:

THERE WAS ALSO NO PEDESTRIANS' SIDEWALKS PRESENT AT THE TIME OF THE VISIT TO THE SITE. THE UTILITY BUILDINGS AROUND THE SITE DO NOT REQUIRE FREQUENT VISITS FOR MAINTENANCE.

#### DISTRESS:

THE SITE WAS ABSOLUTELY NEGLECTED AND TRASHED FROM THE CONSTRUCTION AROUND THE SITE. IT IS ONLY DUMPED BECAUSE THERE WAS NO SIGNS OF FUTURE PROJECTS AND/OR OWNERSHIP FOR THE LAND. THE PROJECT'S SITE WAS NOT THE ONLY SITE THAT LOOKS DUMPED BUT ALSO MOST OF THE SITES IF NOT ALL AROUND MY SITE'S PROJECT LOOKED THE SAME AND FOR THE SAME REASON.







## SOILS:

Depth (m)	# Of Blows & Penetration	N-Value	Soils Classification
1.00	3/15, 4/15, 6/15	10/30	Medium dense, calcareous, fine to medium grained grayish brown
1.50	4/15, 4/15, 8/15	12/30	
2.00	5/15, 9/15, 14/15	23/30	
2.50	10/15, 15/15, 16/15	32/30	Becomes dense
3.00	14/15, 17/15, 22/15	39/30	
4.00	19/15, 21/15, 28/15	49/30	
5.00	24/15, 19/15, 35/15	64/30	Becomes very dense
6.00	27/15, 31/15, 38/15	69/30	

(1 METER = 3.28 FT)



## UTILITIES:

THE SITE IS ALREADY EQUIPPED IN THE INFRA-STRUCTURE WITH WATER DRAINAGE AND SUPPLY PIPES AS WELL AS ELECTRICITY AND PHONE LINES.

## VEHICULAR TRAFFIC:

WEST AND SOUTH OF THE SITE ARE MAJOR 2 BOUNDARY ROADS THAT SEPARATE RESIDENTIAL BLOCKS. CURRENTLY THEY ARE NOT BUSY AT ALL, BUT BY THE TIME THE AREA IS BUILT UP IT WILL GET BUSIER ESPECIALLY ON THOSE 2 ROADS. THE NORTH AND EAST ROADS ARE RESIDENTIAL ROADS, THEY ARE NOT BUSY NOW AND EVEN WHEN THE BLOCK IS COMPLETE WITH ALL THE RESIDENTIAL BUILDINGS IT WILL NOT GET BUSY AT ALL. IT WILL ONLY BECOME JAMMED IN PEAK HOURS IF THE SCHOOL WAS BUILT AND THE MINISTRY OF MUNICIPALITY DECIDES TO KEEP THE ROADS GOING BOTH WAYS.



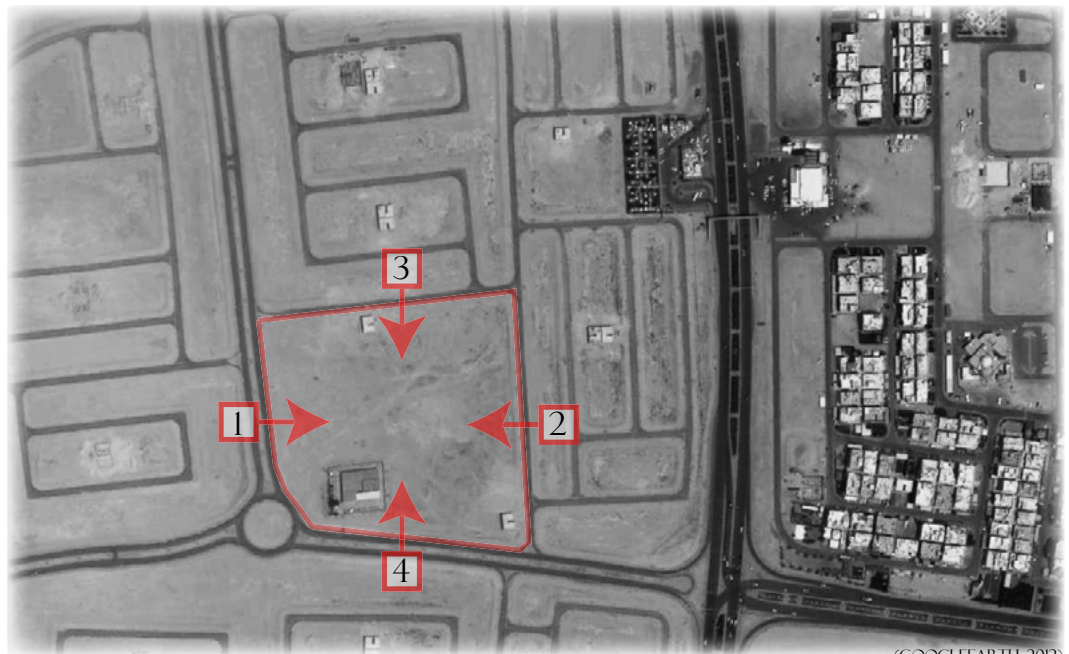
## WILDLIFE:

THERE IS NO WILD LIFE AT ALL AT AND AROUND THE SITE. ONLY BUGS AROUND THE SHRUGS ARE PRESENT NOW AND ONCE THE PLANTS ARE GONE THE BUGS WILL BE GONE WITH THEM.



# SITE ANALYSIS

## BASE MAP SITE ANALYSIS



(GOOGLEEARTH, 2012)

A MAP GUIDE TO ILLUSTRATE WHERE THE SITE PHOTO SHOTS WERE TAKEN FROM IN THE NEXT PAGE.

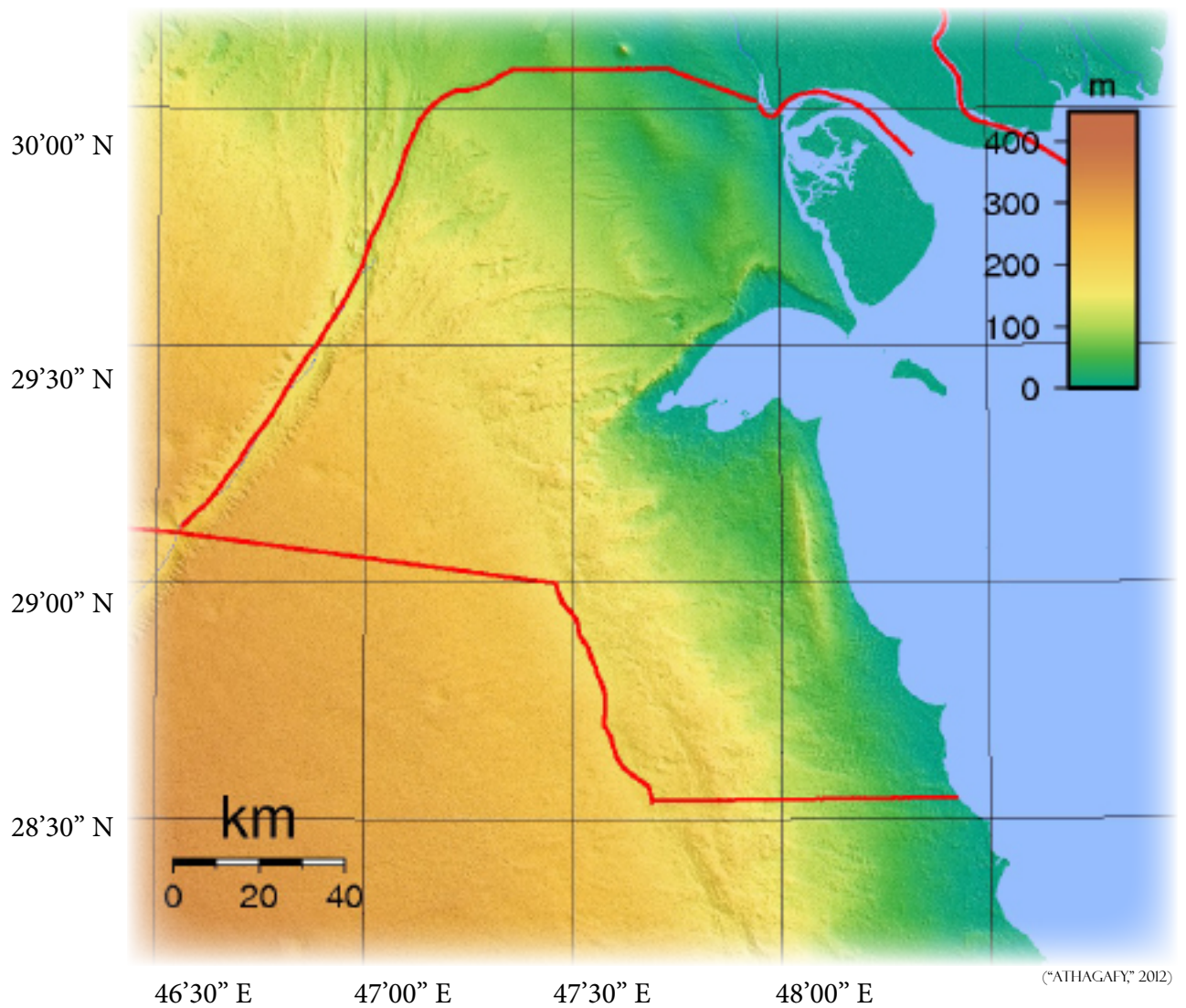






# SITE ANALYSIS

## TOPOGRAPHIC MAP SITE ANALYSIS

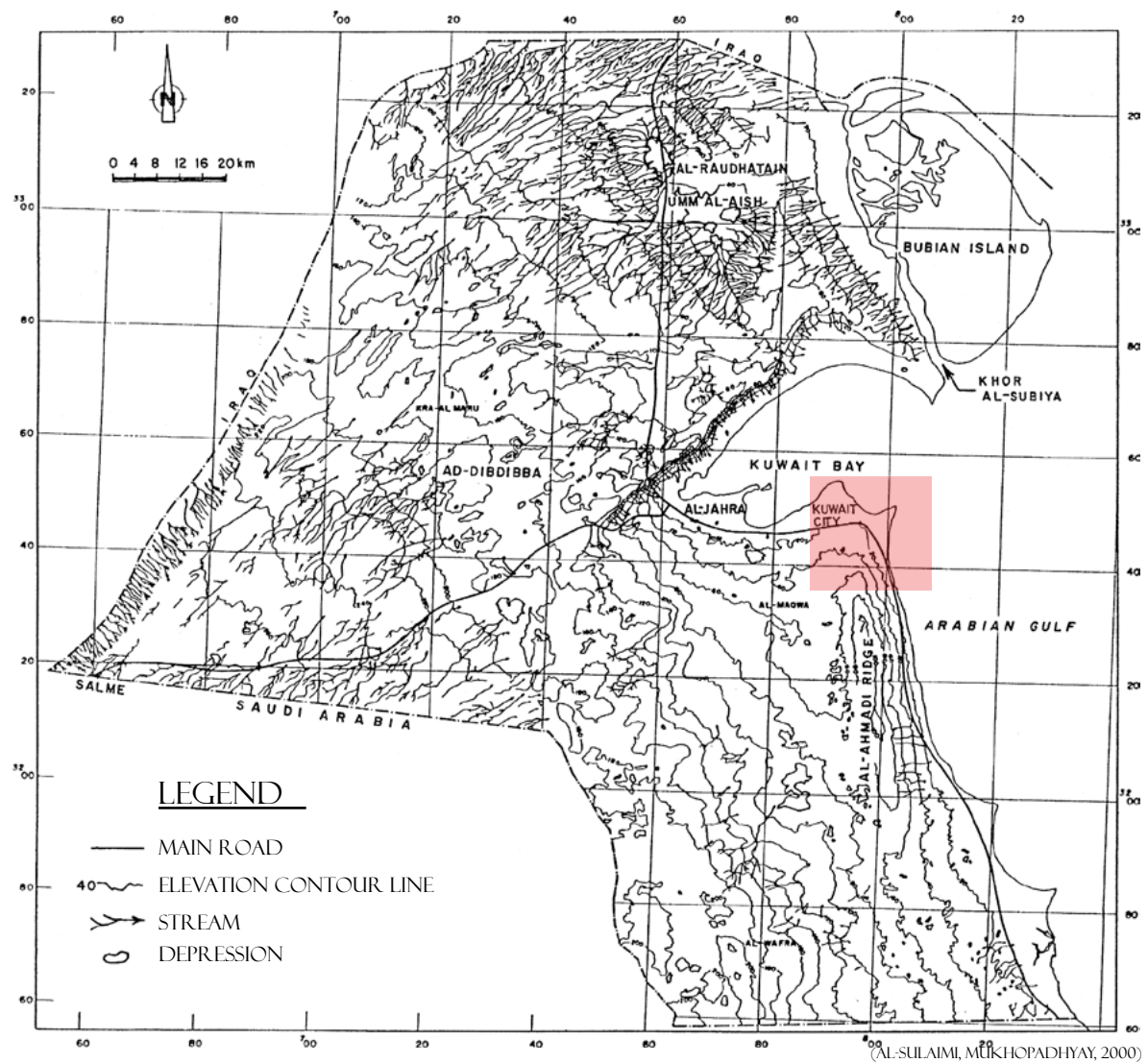


1 mile = 1.6 km





## CONTOUR MAP (MACRO) SITE ANALYSIS





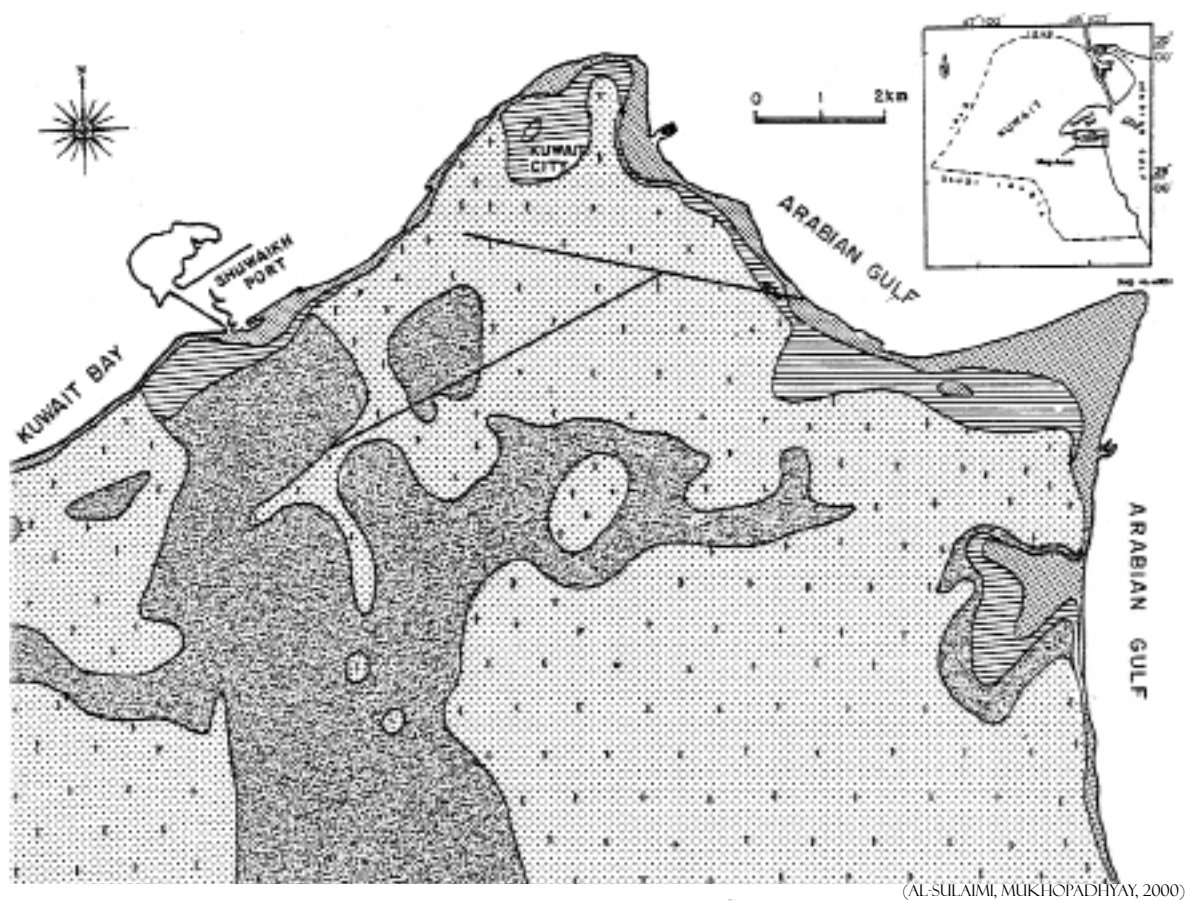
CONTOUR MAP (MICRO)  
SITE ANALYSIS



(GOOGLEEARTH, 2012)



# GEOLOGICAL MAP SHOWING THE SUB-OUTCROPS OF KUWAIT SITE ANALYSIS



(AL-SULAIMI, MUKHOPADHYAY, 2000)

## LEGEND

 COLCRETE

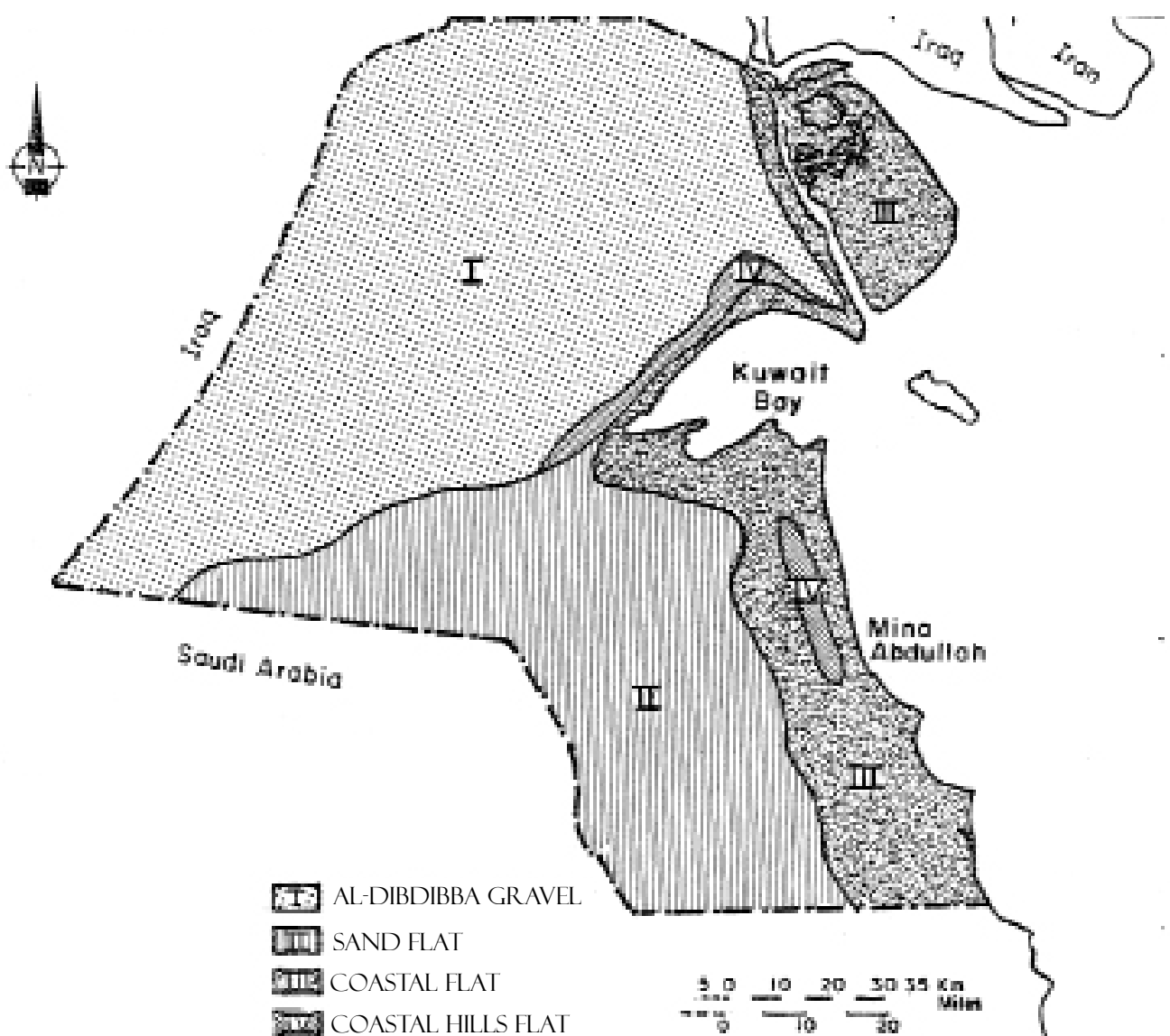
 CROSS-BEDDED SAND

 OOLITE

 SOIL



# PHYSIOGRAPHIC MAP SITE ANALYSIS

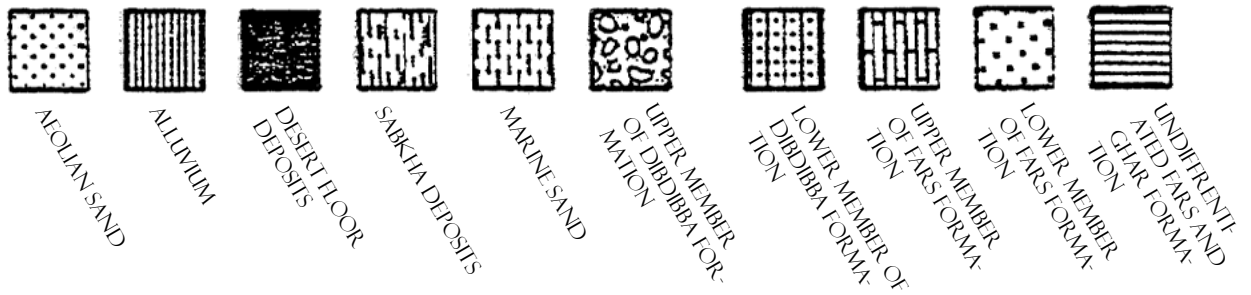


(AL-SULAIMI, MUKHOPADHYAY, 2000)





# SURFACE GEOLOGICAL MAP SITE ANALYSIS



(AL-SULAIMI, MUKHOPADHYAY, 2000)

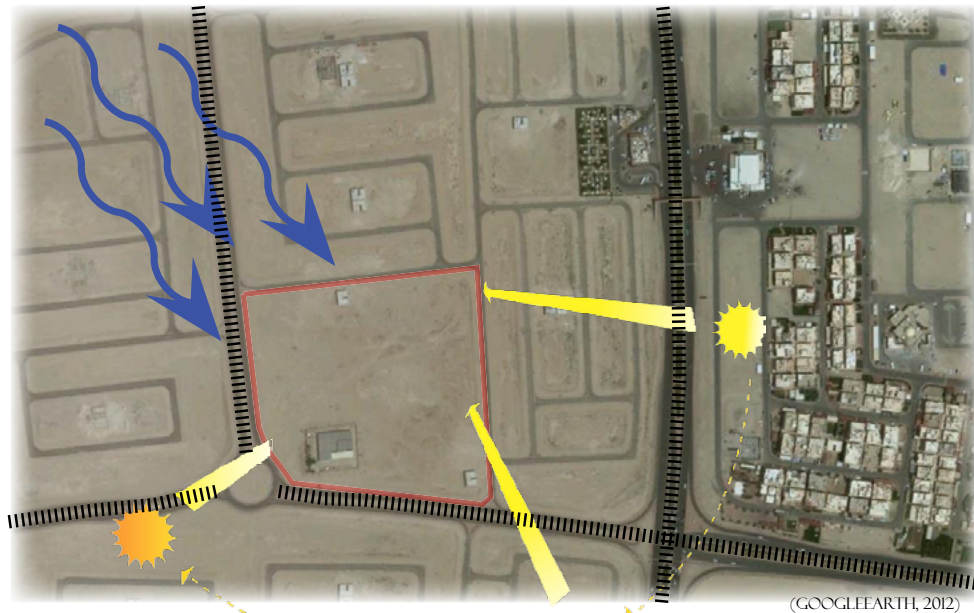


# BASE MAP/INVENTORY SITE ANALYSIS



(GOOGLEEARTH, 2012)

- |                     |                                |                                  |
|---------------------|--------------------------------|----------------------------------|
| --- UTILITIES ROUTE | — MAJOR ROADS                  | □ AREA CENTRAL ELECTRICITY HOUSE |
| — RESIDENTIAL ROADS | □ BLOCK ELECTRICITY GENERATORS | ○ ROUNDABOUT                     |

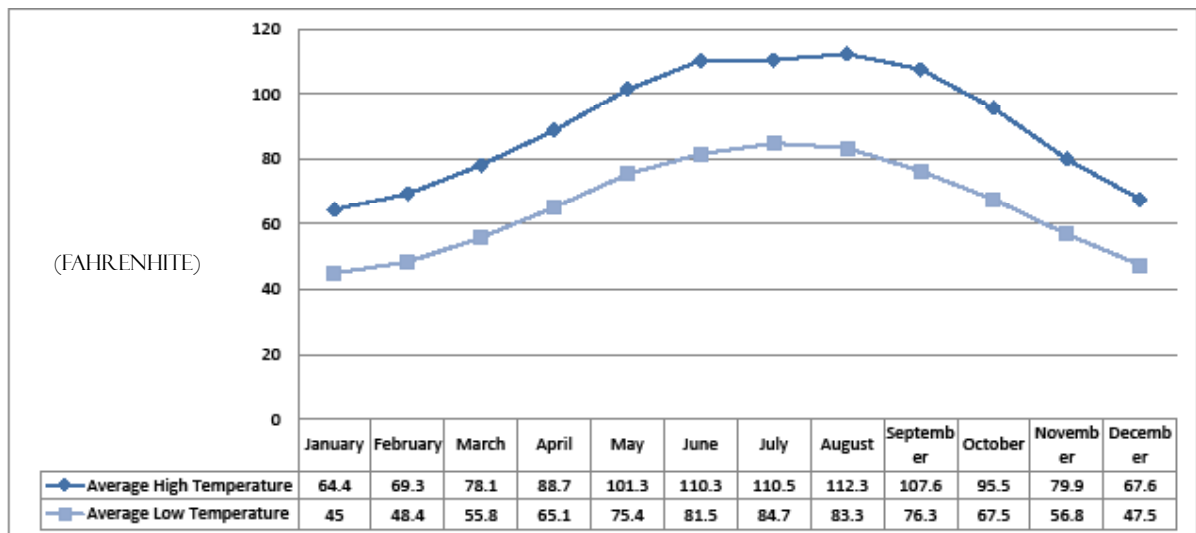


(GOOGLEEARTH, 2012)

- |                     |       |
|---------------------|-------|
| → WIND              | → SUN |
| NOISE FROM VEHICLES |       |



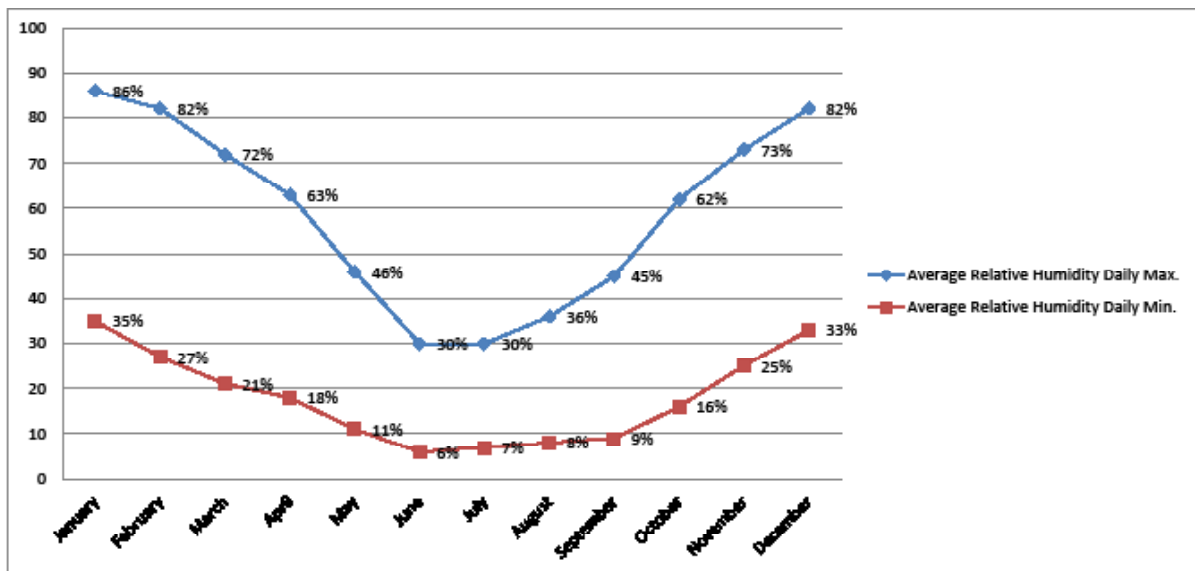
# TEMPERATURE CLIMATE DATA



("CLIMATE, GLOBAL WARMING," 2010)



## HUMIDITY CLIMATE DATA

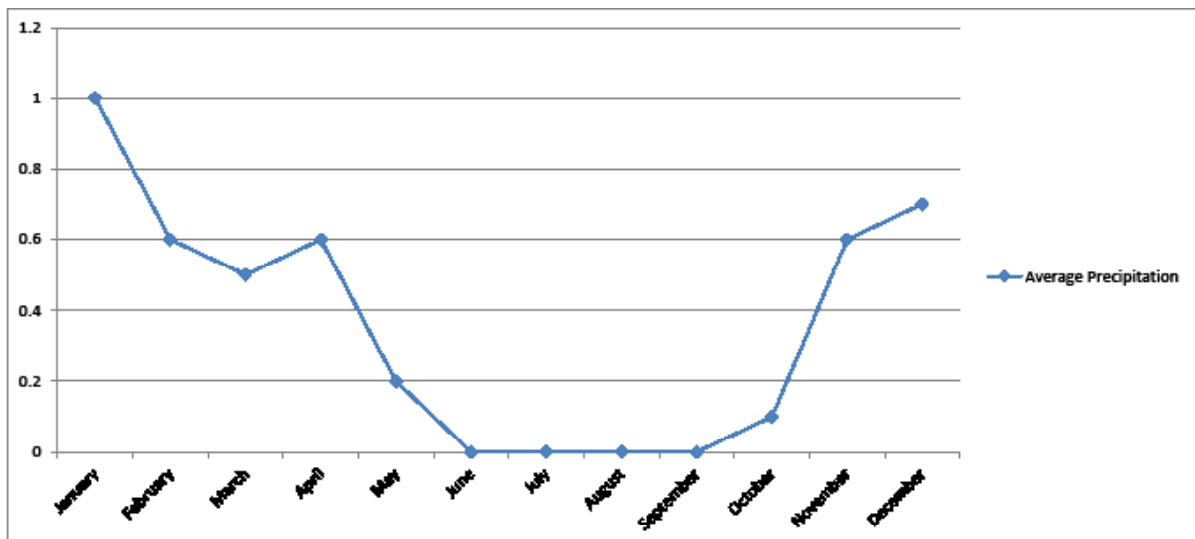


("CLIMATE, GLOBAL WARMING," 2010)





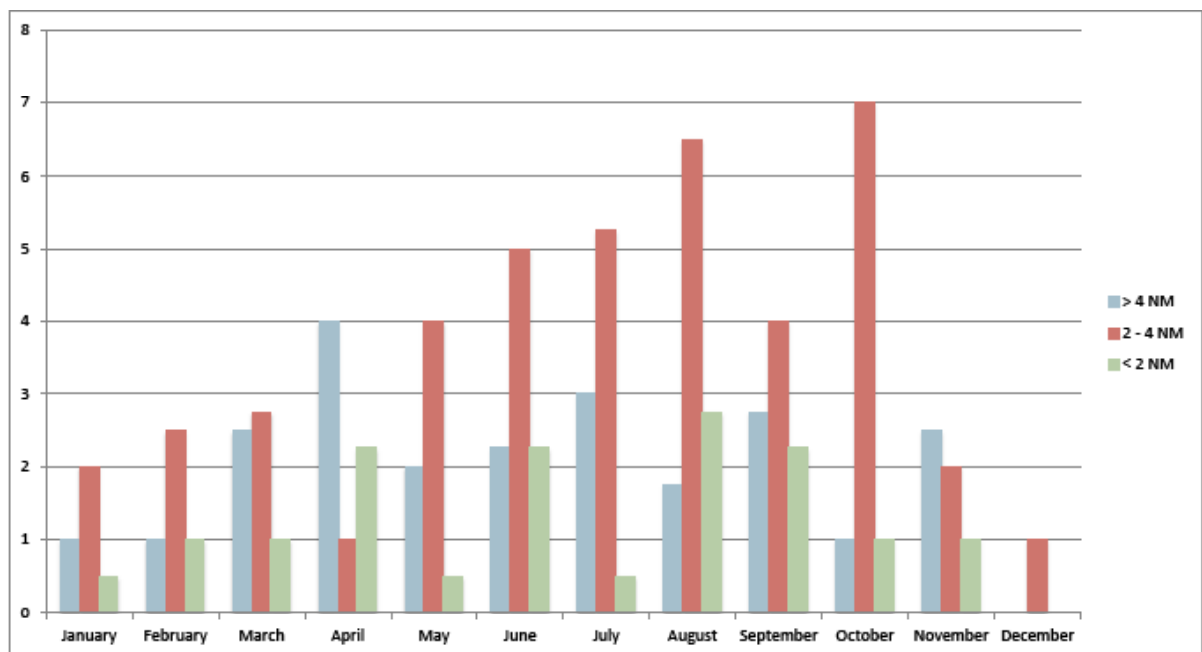
## PRECIPITATION CLIMATE DATA



("CLIMATE, GLOBAL WARMING,," 2010)



## SAND STORMS FREQUENCY CLIMATE DATA

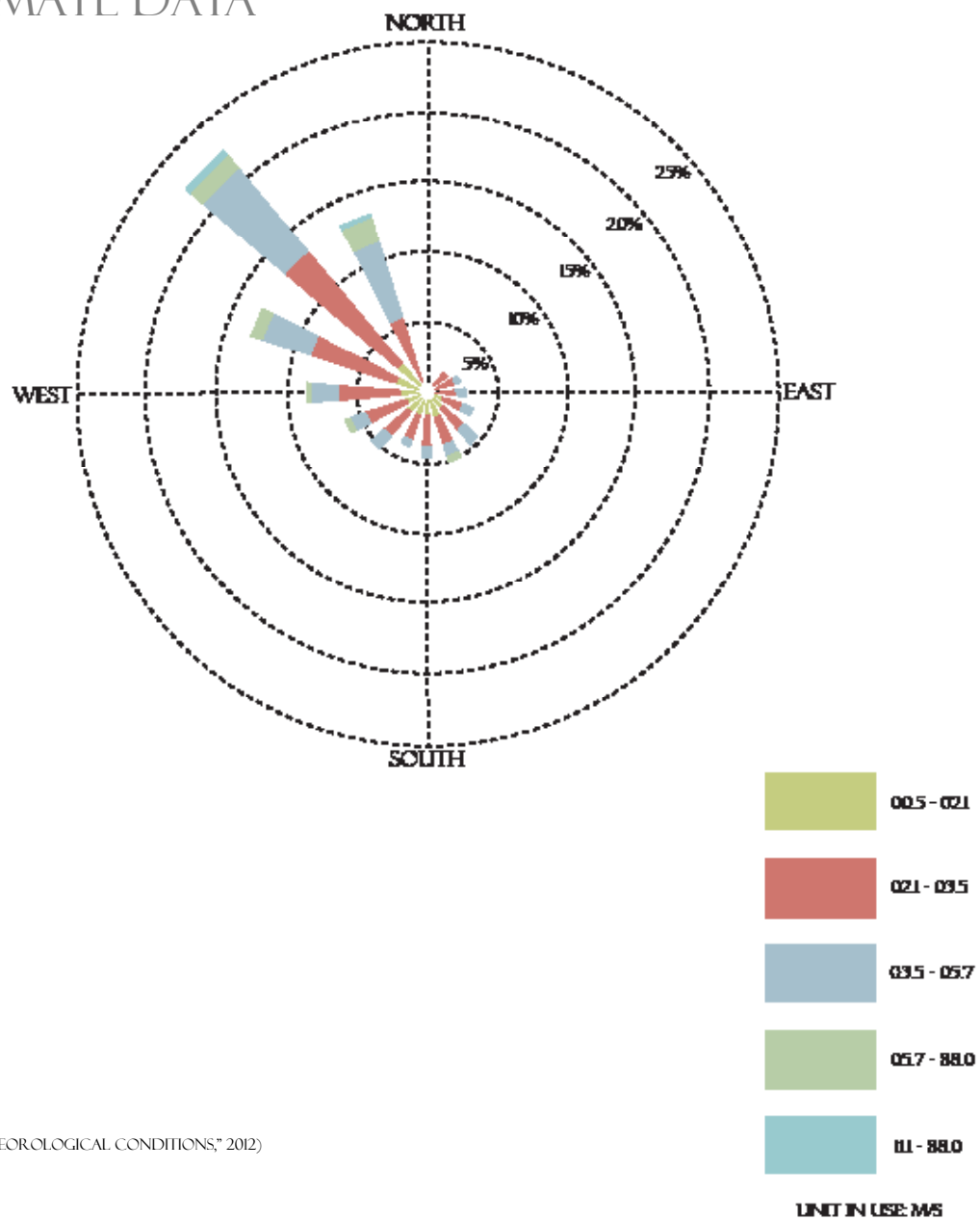


(BOYER, 2010)

NM = NAUTICAL MILE



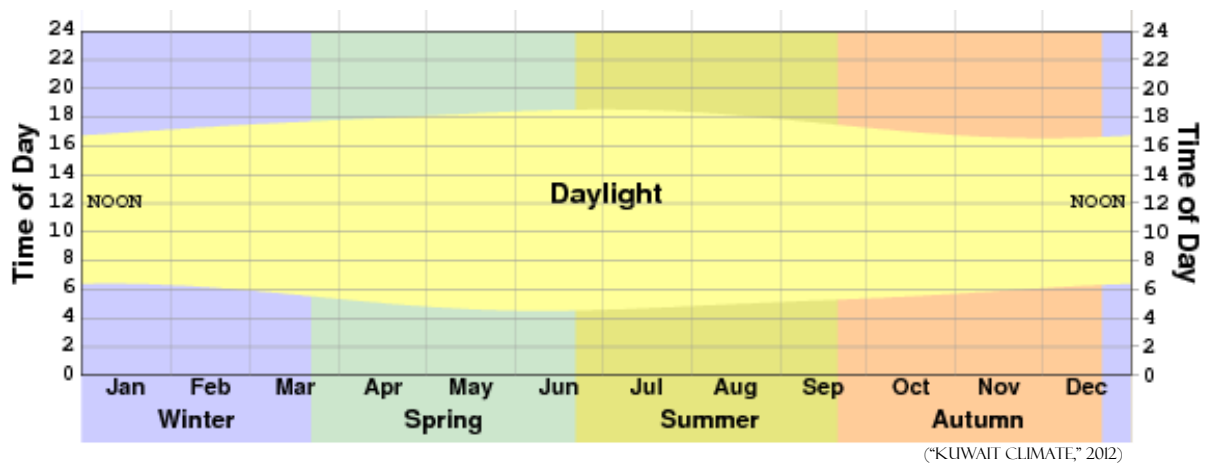
## WIND SPEED & DIRECTION CLIMATE DATA



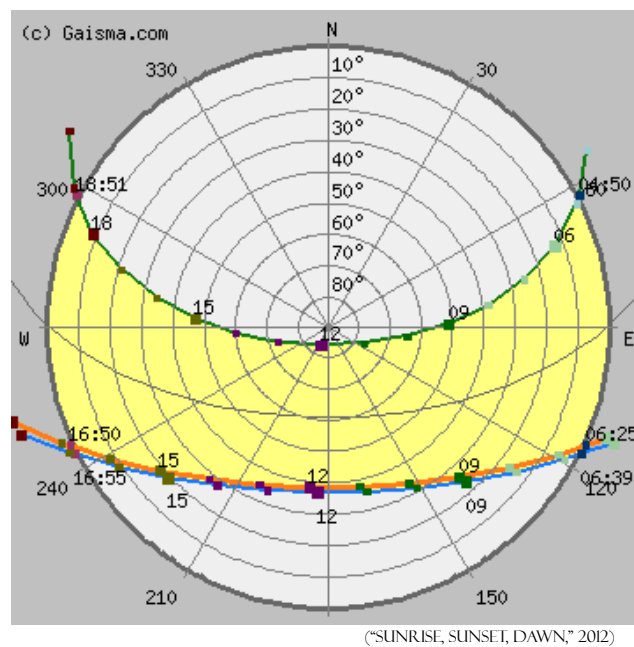
("THE METEOROLOGICAL CONDITIONS," 2012)



## SUNRISE AND SUNSET CLIMATE DATA



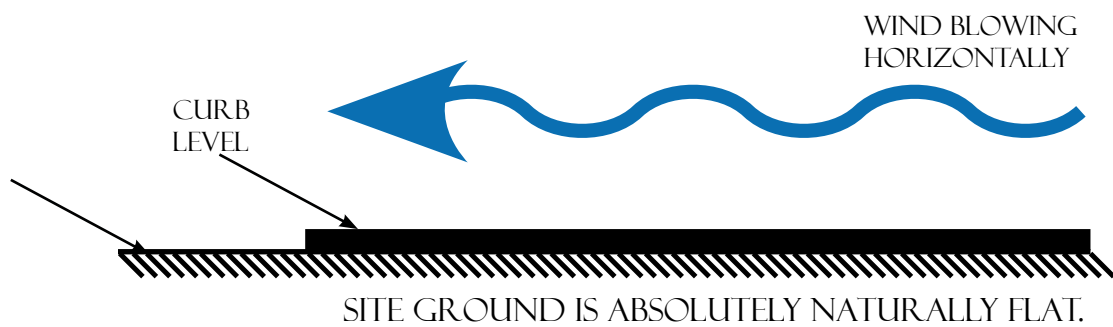
## SUNPATH DIAGRAM CLIMATE DATA







LONGITUDINAL SECTION CUT  
CLIMATE DATA





# PROGRAM DOCUMENT

INTERACTION MATRICES  
SPACE ALLOCATION

(SEE ATTACHED FOLDED PAPER.)



# PROGRAM DOCUMENT

## SQUARE FOOTAGE & TOTAL SPACE ALLOCATION

### ADMINISTRATION

1. PRINCIPAL
2. SECRETARY/RECEPTION
3. NURSE/TOILET
4. COUNSELOR
5. CONFERENCE
6. WORKROOM
7. STAFF LOUNGE
8. STAFF TOILET
9. STORAGE
10. TECHNOLOGY SUPPORT

### ACADEMIC AREAS

#### A. INSTRUCTIONAL SUITE SPACES:

1. CLASSROOMS
2. LABORATORIES
3. GIRLS AND BOYS TOILETS
4. STUDIOS

### SPECIAL EDUCATION

#### A. SPECIAL EDUCATION SPACES:

1. SELF CONTAINED ROOM

### ART EDUCATION

#### A. ART EDUCATION SPACES:

1. STUDIO AREA
2. TEACHER WORK/PLANNING AREA
3. MATERIAL STORAGE



## MUSIC/PERFORMANCE

### A. MUSIC/PERFORMANCE SPACES:

1. GENERAL MUSIC/PERFORMANCE ROOM
2. INSTRUMENTAL MUSIC/OFFICE/CONFERENCE ROOM
3. INSTRUMENT STORAGE ROOM

## MEDIA CENTER

### A. INSTRUCTIONAL COMPONENT OF MEDIA CENTER SPACES:

1. STACK AREA
2. LARGE GROUP INSTRUCTIONAL AREA
3. INDIVIDUAL AND SMALL GROUP ACTIVITY AREAS
4. COMPUTER PUBLIC ACCESS CATALOGUE

### B. MANAGEMENT COMPONENT OF MEDIA CENTER SPACES:

1. CIRCULATION DESK AREA
2. OFFICE
3. EQUIPMENT STORAGE
4. STAFF PROCESSING/PRODUCTION ROOM

## COMPUTER LABORATORY

### A. COMPUTER LABORATORY SPACES

## PHYSICAL EDUCATION

### A. PHYSICAL EDUCATION SPACES:

1. GYMNASIUM
2. P.E. EQUIPMENT STORAGE ROOM
3. P.E. OFFICE
4. PERFORMANCE CHAIR STORAGE

## CAFETERIA / MULTI-USE ROOM

### A. CAFETERIA/MULTI-USE ROOM SPACES:

1. CAFETERIA/MULTI-USE ROOM

## KITCHEN

### A. KITCHEN SPACES:

1. RECEIVING AREA
2. DRY STORAGE
3. COOLER/FREEZER
4. MANAGEMENT AREA
5. PREPARATION KITCHEN AREA
6. SERVING KITCHEN AREA
7. DISHWASHING





## CIRCULATION

### A. CIRCULATION SPACES:

1. ENTRIES
2. LOCKERS
3. CORRIDORS

## CUSTODIAL

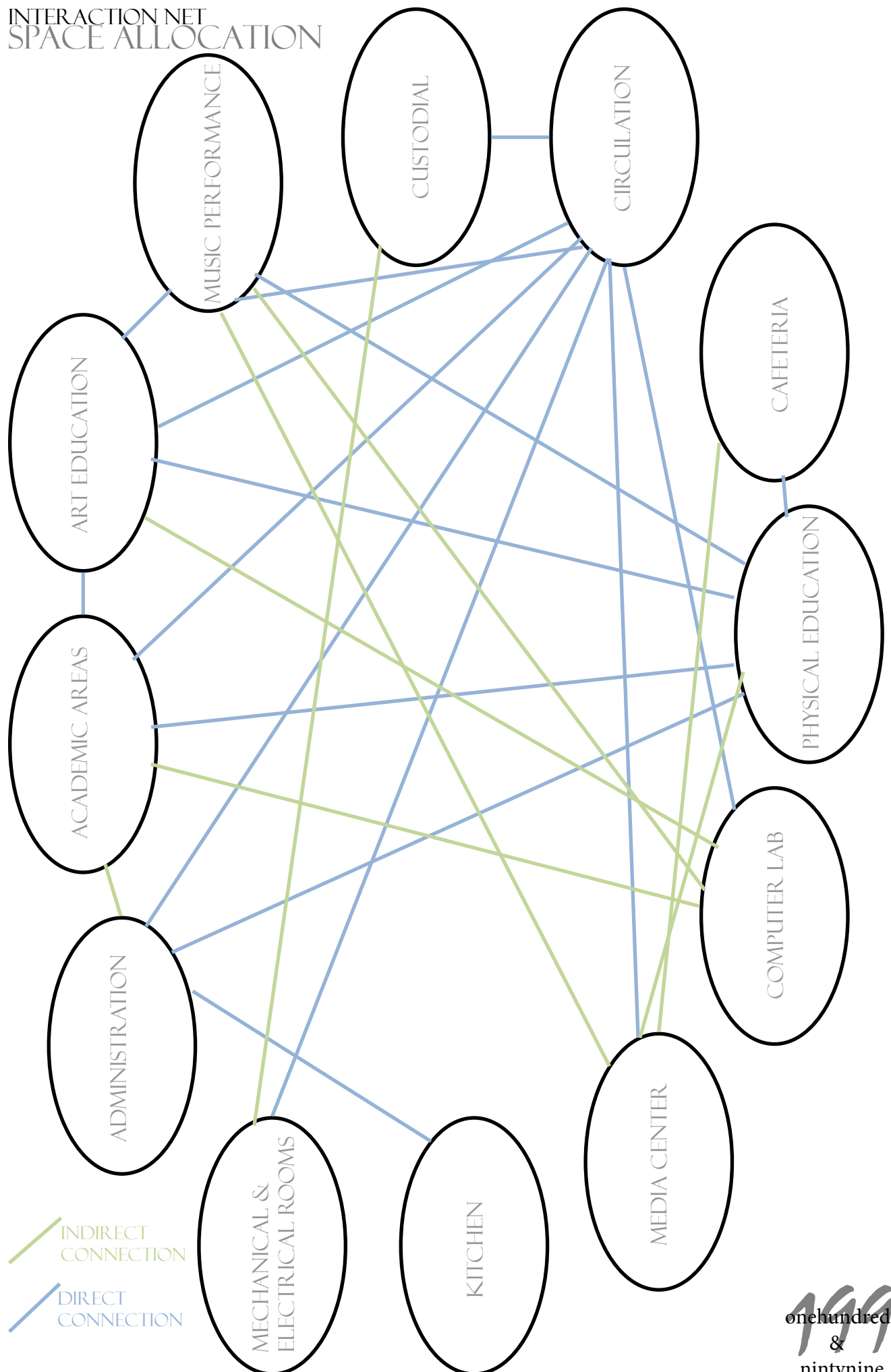
### A. CUSTODIAL SPACES:

1. FACILITY MANAGER OFFICE
2. CUSTODIAL CLOSETS
3. CUSTODIAL STORAGE ROOM

## MECHANICAL, ELECTRICAL AND COMMUNICATIONS ROOMS



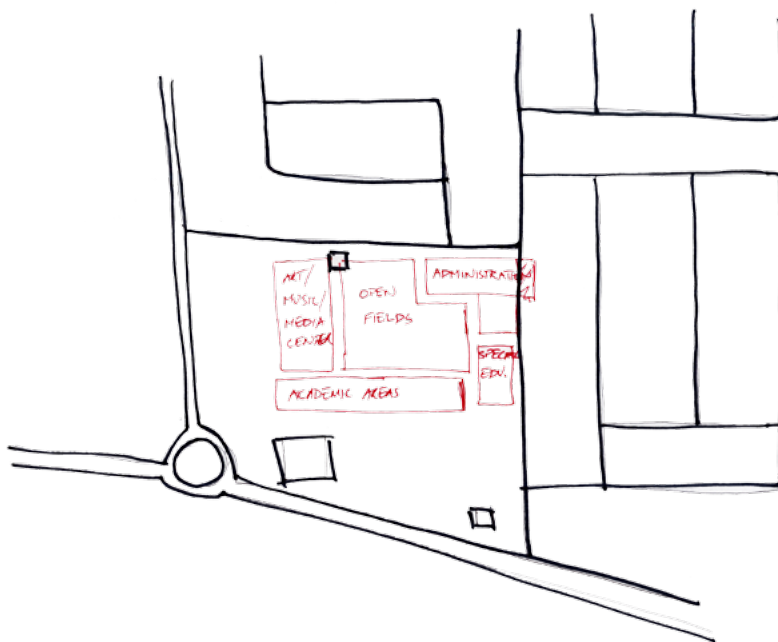
# INTERACTION NET SPACE ALLOCATION



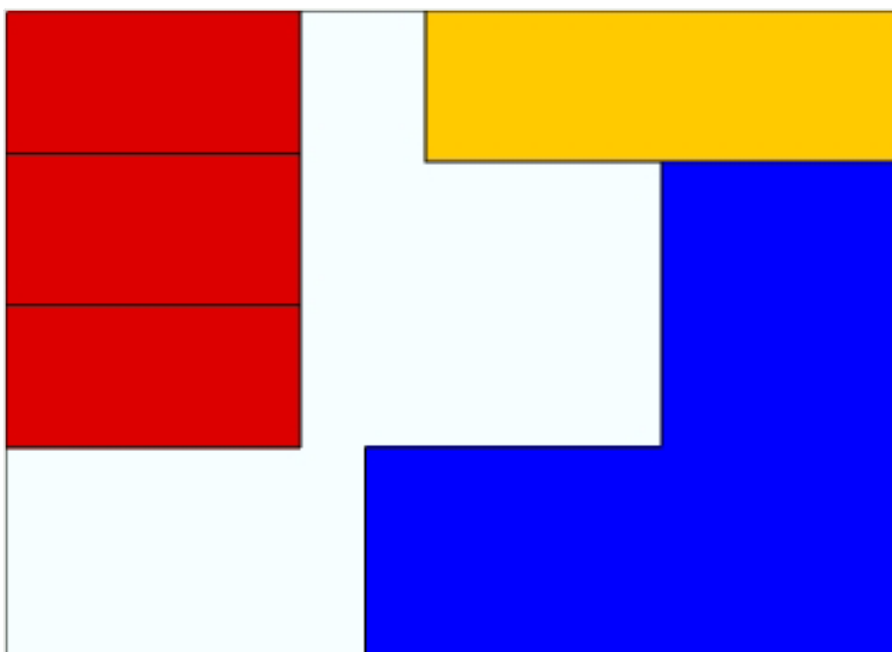


# PROCESS WORK

## SITE STUDY

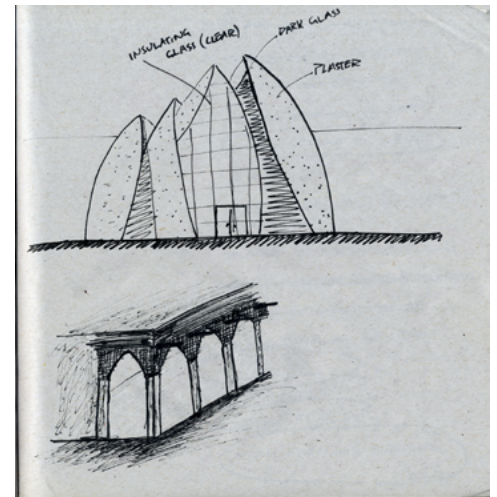


## LAYOUT STUDY



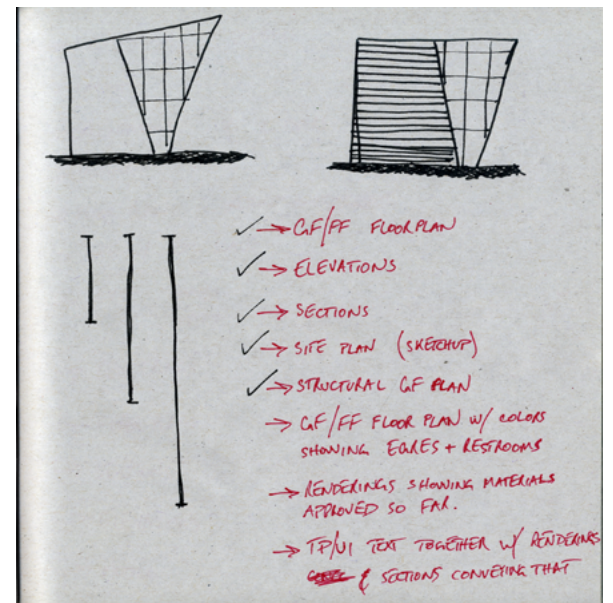
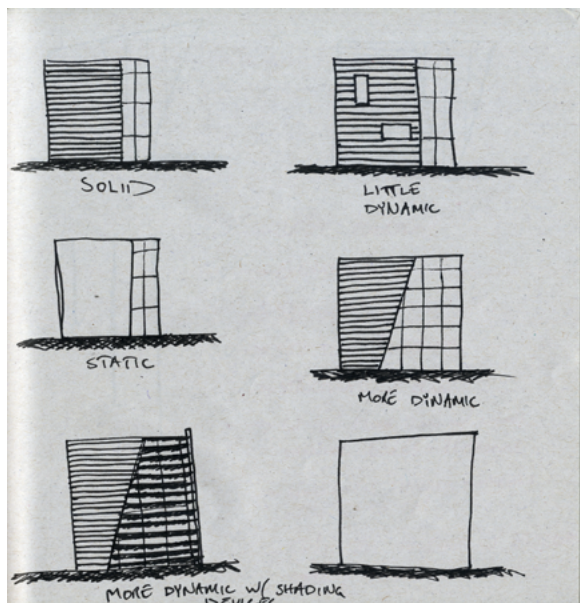
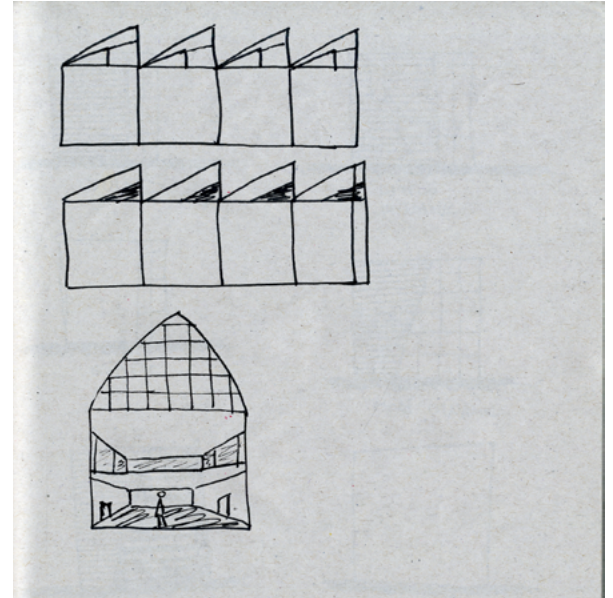
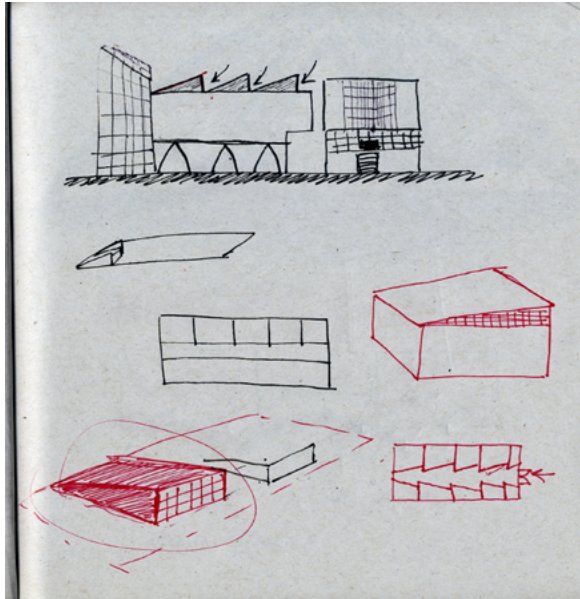


## A 3D architectural rendering of a large, modern building complex. The structure features multiple wings, courtyards, and a central courtyard area. The building is characterized by its light-colored facade and dark roof sections. A prominent glass-enclosed staircase is visible on the right side. The complex is surrounded by a paved area, and the overall design suggests a large-scale institutional or commercial project.





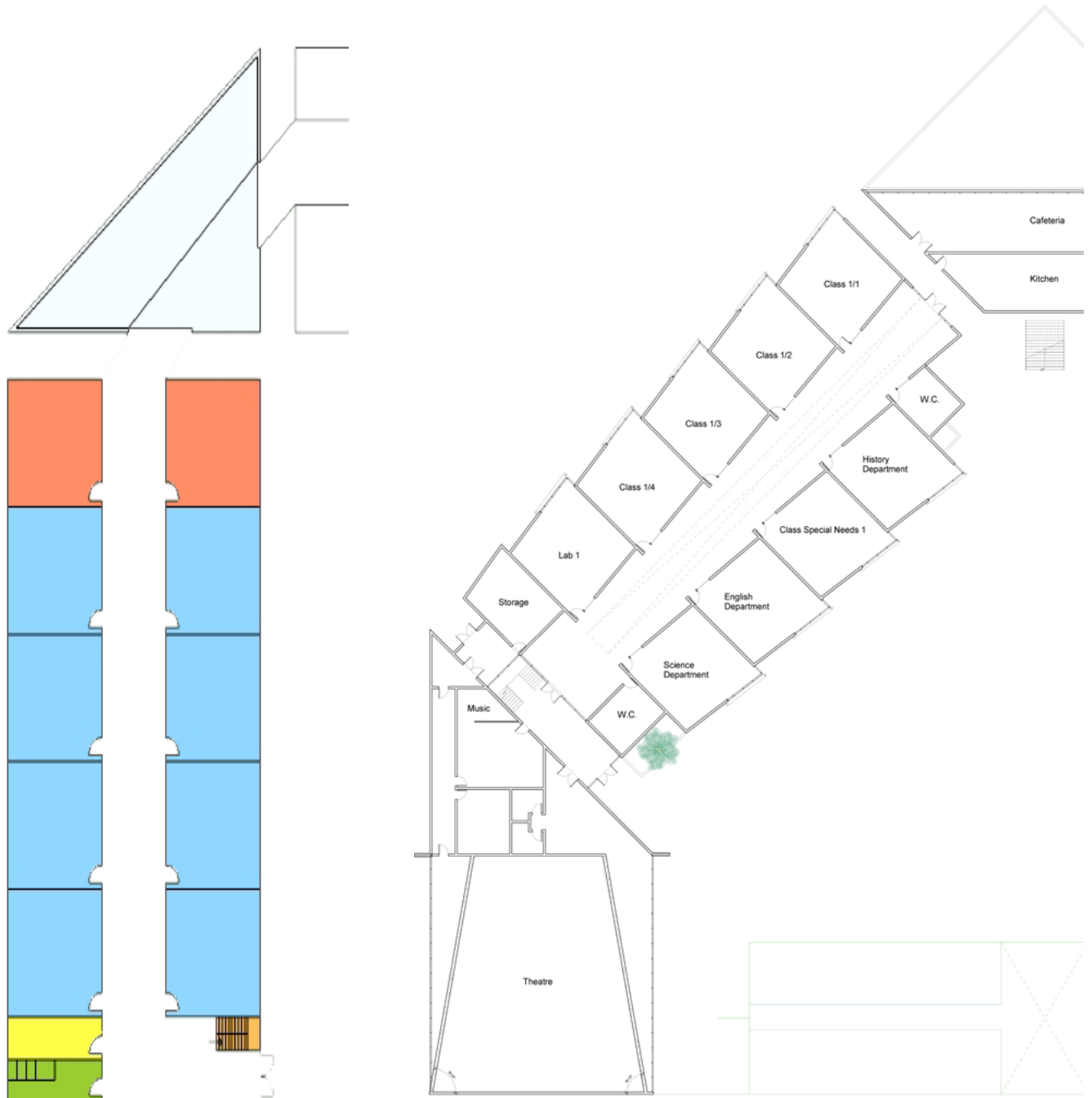






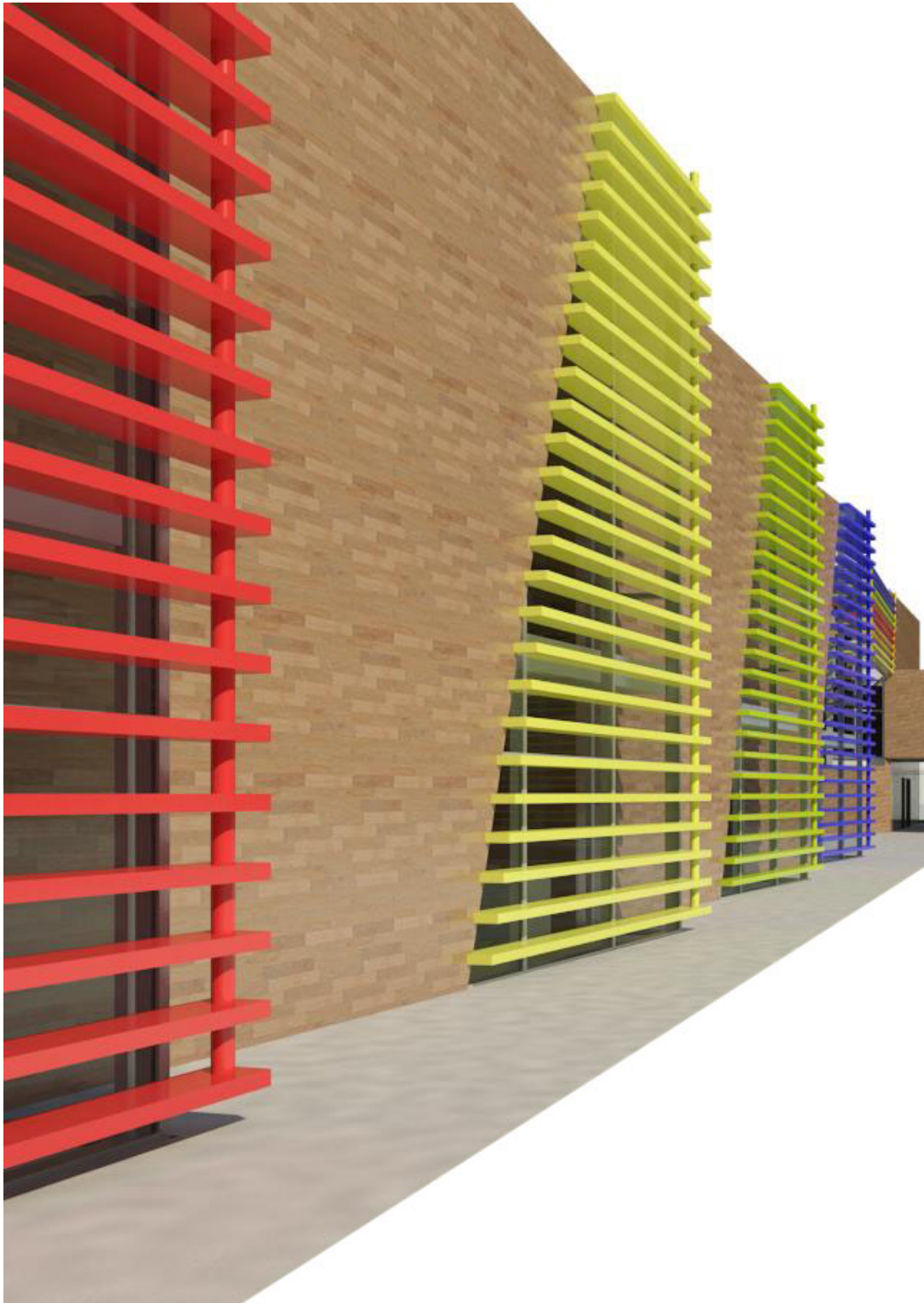
# PROCESS WORK

## FLOOR PLAN STUDY



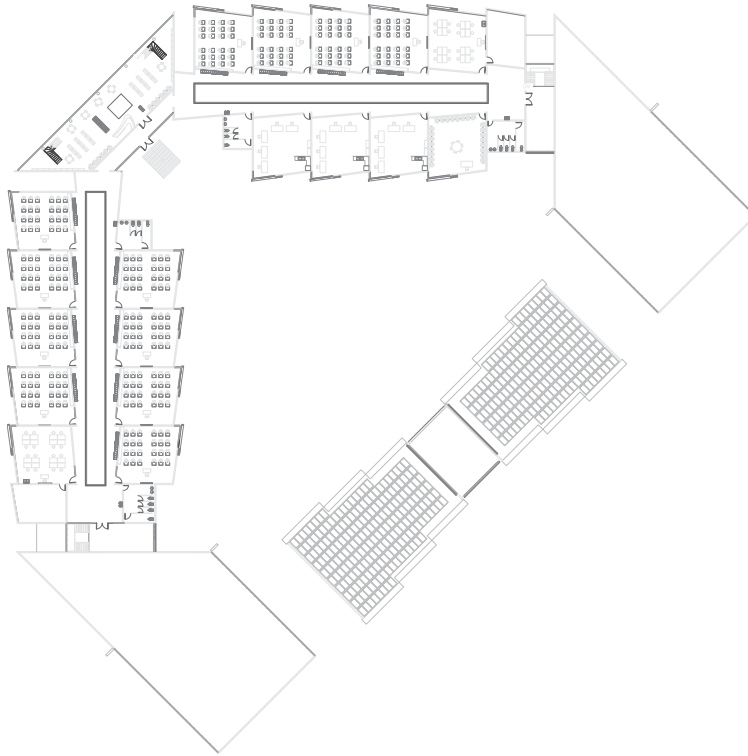


PROJECT  
SOLUTION  
SHADING DEVICES

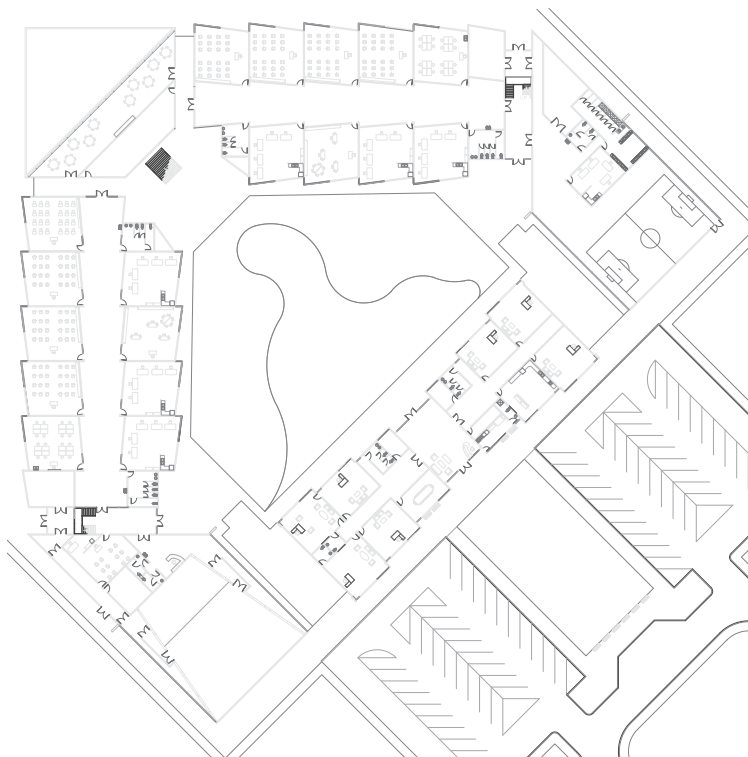




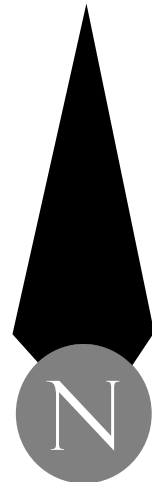
# PROJECT SOLUTION



FIRST FLOOR PLAN



GROUND FLOOR PLAN



0' 15' 30' 60'







# PROJECT SOLUTION LIBRARY



THE LIBRARY SETS A GREAT EXAMPLE OF HOW TO USE THE PASSIVE SYSTEM AS SIMPLE AS HOW THE ORIENTATION OF THE BUILDING SHOULD BE. THE BUILDING IS ORIENTATED IN A WAY THAT PUTS THE CURTAIN WALLS FACING AWAY FROM DIRECT SUNLIGHT IN MOST TIMES OF THE DAY.



# PROJECT SOLUTION CORRIDOR



A HARMONIOUS DYNAMIC BRIGHT CIRCULATION AREA THAT GATHERS INDIRECT SUNLIGHT IN A PLEASUR-  
FULLY COLORED CORRIDOR. EACH CLASS IS PROVIDED  
WITH ITS OWN LOCKERS THAT ARE JUST AROUND THE  
CLASS DOOR. THE CORRIDOR HAS THE BENEFIT  
OF A COMFORTABLE WIDE HALLWAY.





# PROJECT SOLUTION CLASSROOM



**A DELIGHTFUL CLASSROOM THAT HAS A FULL ADVANTAGE OF THE DAY SUNLIGHT BUT ALSO IS COMPLETELY PROTECTED FROM DIRECT SUNLIGHT BY THE COLORFUL SHADING DEVICES THAT ARE JUST OUTSIDE OF THE CURTAIN WALLS. ALSO, SHINY WHITE WALLS TO ENHANCE THE LIGHT EXPOSURE THAT IS ALSO PROTECTED WITH DARK STONE FROM DIRECT CONTACT BY CHILDREN.**



PROJECT  
SOLUTION  
LIBRARY BACKYARD







# PROJECT SOLUTION DROP-OFF AREA





# PROJECT SOLUTION COURTYARD





# PROJECT SOLUTION CARSHOT





PROJECT  
SOLUTION  
BIRDEYE PERSPECTIVE



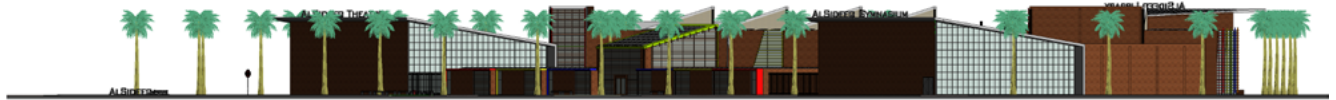




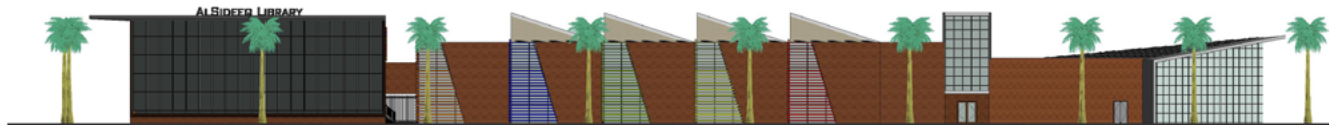
PROJECT  
SOLUTION  
ELEVATIONS  
TRUE COORDINATES



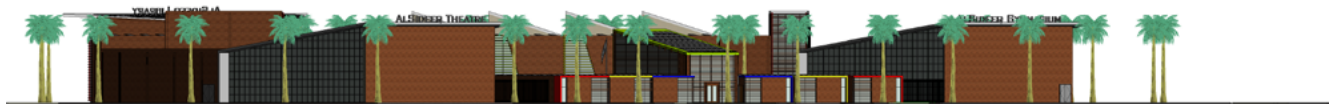
NORTH



EAST



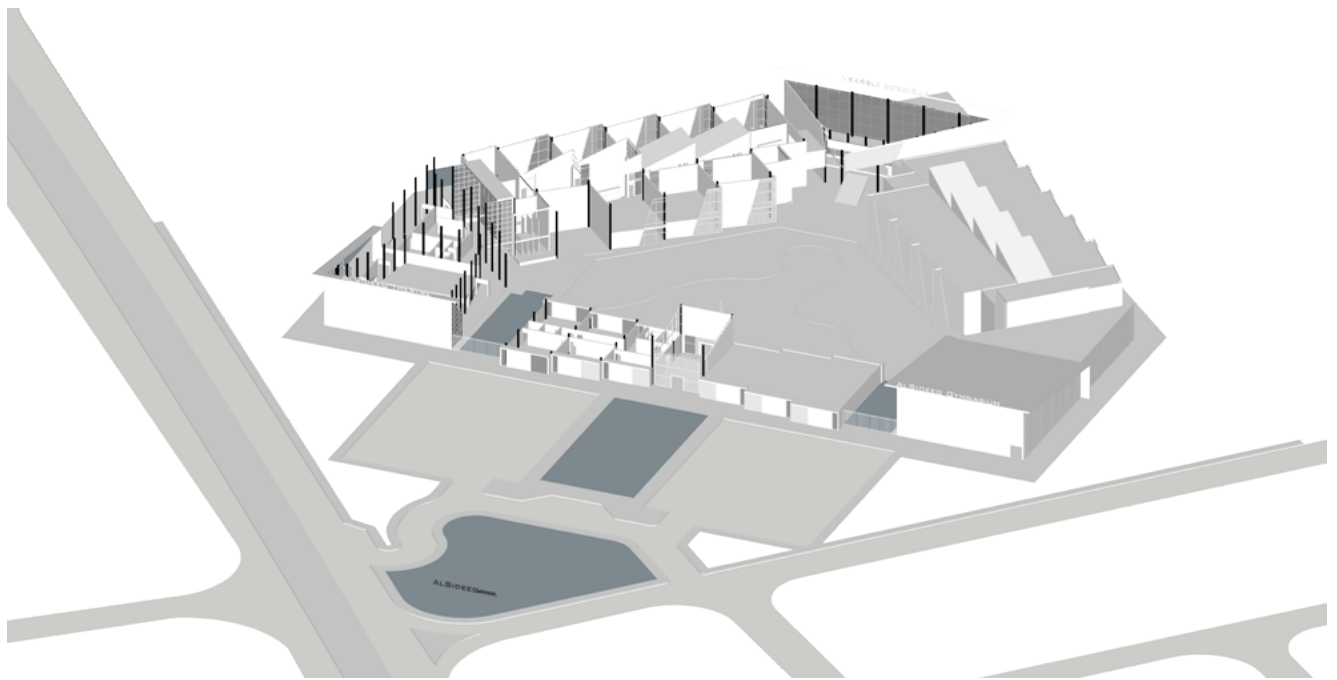
WEST



SOUTH

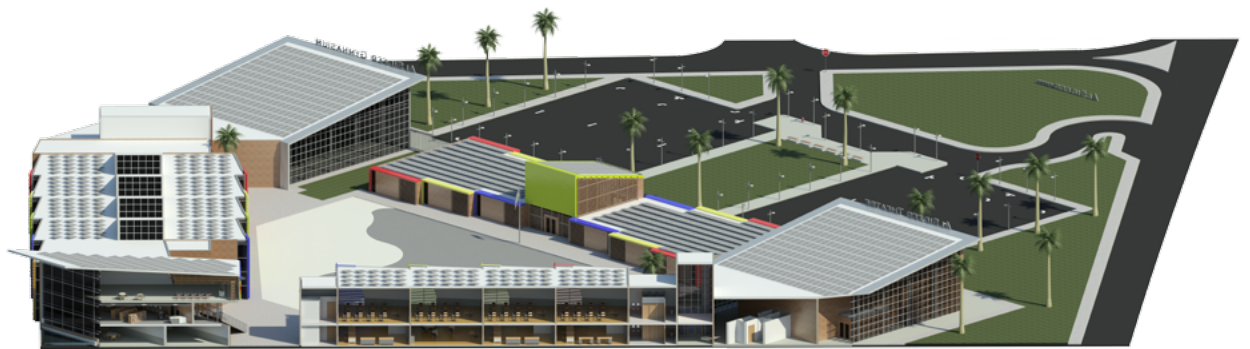


PROJECT  
SOLUTION  
STRUCTURE



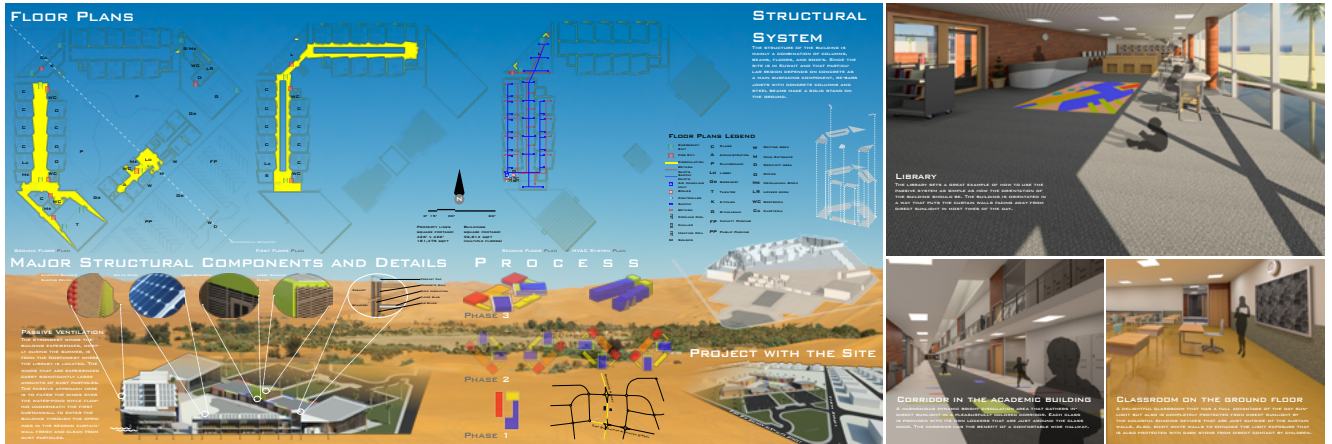


PROJECT  
SOLUTION  
SECTION PERSPECTIVE





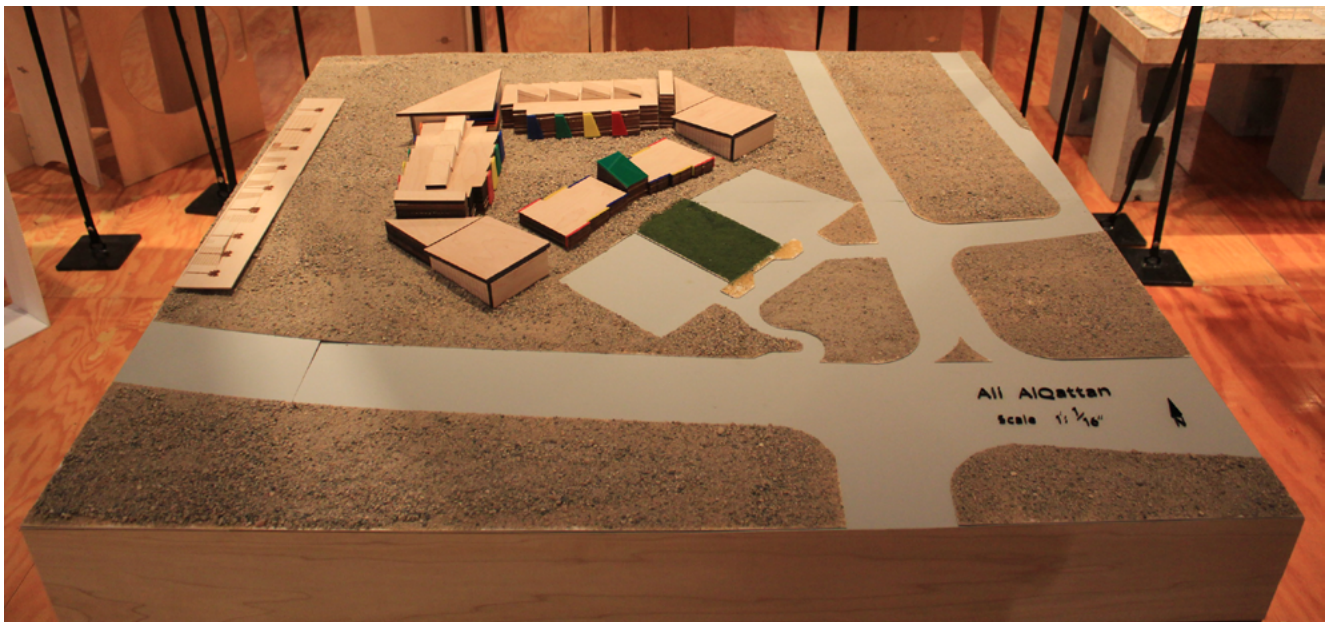
# PROJECT INSTALLATION BOARDS







PROJECT  
— INSTALLATION —  
MODEL





# —REFERENCE LIST—

COTTERELL, J. (N.D.). *ENVIRONMENT AND BEHAVIOR*. RETRIEVED FROM [HTTP://EAB.SAGEPUB.COM/CONTENT/16/4/455.SHORT](http://EAB.SAGEPUB.COM/CONTENT/16/4/455.SHORT)

MINISTRY OF PUBLIC WORKS. (2012, OCTOBER 5). RETRIEVED FROM [HTTP://WWW.MPW.GOV.KW/SITES/AR/PAGES/INFOPAGES/HOWCANI.ASPX](http://WWW.MPW.GOV.KW/SITES/AR/PAGES/INFOPAGES/HOWCANI.ASPX)

ARCHITECTURE. (2012, OCTOBER 05). RETRIEVED FROM [HTTP://EN.WIKIPEDIA.ORG/WIKI/ARCHITECTURE](http://EN.WIKIPEDIA.ORG/WIKI/ARCHITECTURE)

CENTRAL INTELLIGENCE AGENCY, (2012). KUWAIT. RETRIEVED FROM CIA WEBSITE: [HTTPS://WWW.CIA.GOV/LIBRARY/PUBLICATIONS/THE-WORLD-FACTBOOK/GEOS/KU.HTML](https://WWW.CIA.GOV/LIBRARY/PUBLICATIONS/THE-WORLD-FACTBOOK/GEOS/KU.HTML)

GEOGRAPHY OF KUWAIT. (2012, OCTOBER 04). RETRIEVED FROM [HTTP://EN.WIKIPEDIA.ORG/WIKI/GEOGRAPHY\\_OF\\_KUWAIT](http://EN.WIKIPEDIA.ORG/WIKI/GEOGRAPHY_OF_KUWAIT)

GOOGLE. (COMPOSER). (2012). KUWAIT MAP. [PRINT MAP]. RETRIEVED FROM [HTTPS://MAPS.GOOGLE.COM/MAPS?HL=EN&Q=KUWAIT&UM=1&IE=UTF-8&SA=N&TAB=WL](https://MAPS.GOOGLE.COM/MAPS?HL=EN&Q=KUWAIT&UM=1&IE=UTF-8&SA=N&TAB=WL)

FAMOUSBUILDINGS. (COMPOSER). (2012). FAMOUS BUILDINGS. [WEB PHOTO]. RETRIEVED FROM [HTTP://WWW.FAMOUSBUILDINGS.NET/ANCIENT-BUILDINGS/50-HANGING-GARDENS-OF-BABYLON.HTML](http://WWW.FAMOUSBUILDINGS.NET/ANCIENT-BUILDINGS/50-HANGING-GARDENS-OF-BABYLON.HTML)

LEAD, A. (ARTIST). (2012). PERSIAN FACTIONS WALLS. [WEB PHOTO]. RETRIEVED FROM [HTTP://RATIONALIA.COM/FORUM/VIEWTOPIC.PHP?F=37&T=825](http://RATIONALIA.COM/FORUM/VIEWTOPIC.PHP?F=37&T=825)

(2012). THE MESSAGE OF ISLAM. (2012). [WEB PHOTO]. RETRIEVED FROM [HTTP://WASALAMM.BLOGSPOT.COM/P/HZMUHAMMEDSAV-PROROK-MOHAMMED-SAV.HTML](http://WASALAMM.BLOGSPOT.COM/P/HZMUHAMMEDSAV-PROROK-MOHAMMED-SAV.HTML)

KUWAIT CLIMATE. (2012, NOVEMBER 30). RETRIEVED FROM [HTTP://WWW.CLIMATE-CHARTS.COM/LOCATIONS/K/KW40582.PHP](http://WWW.CLIMATE-CHARTS.COM/LOCATIONS/K/KW40582.PHP)



- DENHARDT, R. (2009). MANAGING HUMAN BEHAVIOR IN PUBLIC AND NONPROFIT ORGANIZATIONS. THOUSAND OAKS,CALIFORNIA: SAGE PUBLICATION,INC.
- BOEVE-DE PAUW, J. (2011). VALUING THE INVALUABLE: EFFECTS OF INDIVIDUAL, SCHOOL AND CULTURAL FACTORS .. PHILADELPHIA: BOEVE-DE PAUW&GARANT PUBLISHERS.
- DELATTRE, A. (1983). HELPING YOUR CHILD LEARN RESPONSIBLE BEHAVIOR. NEW YORK: PUFFIN.
- WASSERMAN, B. (2000). ETHICS AND THE PRACTICE OF ARCHITECTURE. CANADA: JOHN WILEY& SONS,INC.
- STARR, F. (2012). CORPORATE RESPONSIBILITY FOR CULTURAL HERITAGE: CONSERVATION, SUSTAINABLE DEVELOPMENT, AND CORPORATE REPUTATION (ROUTLEDGE STUDIES IN HERITAGE). ROUTLEDGE (DECEMBER 10, 2012).
- DORF, R. (2001). TECHNOLOGY, HUMANS, AND SOCIETY:: TOWARD A SUSTAINABLE WORLD. ACADEMIC PRESS; 1 EDITION (FEBRUARY 6, 2001).
- KUWAIT. IN (2012). WIKIPEDIA. WIKIPEDIA FOUNDATION. RETRIEVED FROM [HTTP://EN.WIKIPEDIA.ORG/WIKI/KUWAIT](http://en.wikipedia.org/wiki/KUWAIT)
- SAJJAD, V. (2012, AUGUST 12). KUWAIT FEELS PINCH OF 'CLIMATE CHANGE' . ARAB TIMES. RETRIEVED FROM [HTTP://WWW.ARABTIMESONLINE.COM/NEWSDETAILS/TABID/96/SMID/414/ARTICLEID/149615/REFTAB/96/DEFAULT.ASPX](http://www.arabtimesonline.com/news/details/tabid/96/SMID/414/ARTICLEID/149615/REFTAB/96/DEFAULT.ASPX)
- AL-AIDAROUS, M. (2002). HISTORY OF KUWAIT: CONTEMPORARY AND THE PRESENT. (VOL. 3263). KUWAIT CITY: DAR ALKUTOUB ALHADETHA. RETRIEVED FROM [HTTP://WWW.AL-MOSTAFA.INFO/DATA/ARABIC/DEPOT2/GAP.PHP?FILE=010240.PDF](http://www.al-mostafa.info/data/arabic/depot2/gap.php?file=010240.pdf)
- U.S. CENTRAL INTELLIGENCE AGENCY, (2012). THE WORLD FACT BOOK: KUWAIT. RETRIEVED FROM CIA WEBSITE: [HTTPS://WWW.CIA.GOV/LIBRARY/PUBLICATIONS/THE-WORLD-FACTBOOK/GEOS/KU.HTML](https://www.cia.gov/library/publications/the-world-factbook/geos/ku.html)
- BOOTH, C. (2009). A MOTIVATIONAL TURN FOR ENVIRONMENTAL ETHICS. (1 ED., VOL. 14, P. 53/78). INDIANA UNIVERSITY PRESS. RETRIEVED FROM [HTTP://WWW.JSTOR.ORG/STABLE/40339168](http://www.jstor.org/stable/40339168)
- MAYHEW, ALAN, O.H. KOENIGSBERGER, T.G. INGERSOLL, AND S.V. SZOKOLAY. MANU AL OF TROPICAL HOUSING AND BUILDING. 4TH IMPRESSION. NEW YORK: LONGMAN INC., 1973. PRINT.



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*“BE WISE, BE NICE, BE NDSU”*

HOMETOWN: KUWAIT

