

RESEARCH QUESTION

HOW ARCHITECTURE AND DIVERSIFYING TYPOLOGY MIGHT BE IMPLEMENTED IN ORDER TO AID IN THE SOLUTION OF ECONOMIC HURDLES RELATED TO THE CURRENT TREND OF REGIONAL RACEWAY TYPOLOGY AND DESIGN.

THESIS STATEMENT

REGIONAL AUTOMOTIVE RACING FACILITIES COST A SIGNIFICANT AMOUNT OF CAPITAL TO BUILD AND MAINTAIN. ADDITIONALLY THESE FACILITIES ARE OFTEN LEFT VACANT IN NORTHERN PORTIONS OF THE COUNTRY THROUGHOUT WINTER. IT IS BOTH INEFFICIENT IN TERMS OF BOTH THE ECONOMICS AND LAND USE ASSOCIATED WITH THESE PROJECTS.

I HAVE FOCUSED MY ATTENTION TO ALTERING THE FUTURE DESIGN OF AUTOMOTIVE SPEEDWAYS THROUGH DIFFERENCES IN TYPOLOGY AND ARCHITECTURE IN ATTEMPTS OF JOINING MULTIPLE TYPOLOGIES WITH ONE UNIFIED PROJECT.

WHY IS IT IMPORTANT?

REGIONAL RACEWAYS OFFER A LOCATION FOR THOSE IN THE COMMUNITY WHO SHARE A PASSION FOR THE AUTOMOTIVE WORLD TO COME TOGETHER AND FOSTER RELATIONSHIPS BETWEEN FRIENDS, FAMILY AND THE COMMUNITY. IN ADDITION TO THE ECONOMIC BENEFITS THAT REGIONAL RACEWAYS PROVIDE THE HOSTING COMMUNITY. THEY ALSO PROVIDE A SMALL BUT IMPORTANT SOLUTION TO A MINOR PUBLIC HEALTH ISSUE. DANGEROUS DRIVING BEHAVIOR'S ARE AND ALWAYS HAVE BEEN A SUBCULTURE TO THE AUTOMOTIVE COMMUNITY. THESE BEHAVIOR'S OFTEN MANIFEST THEMSELVES AS "STREET RACING", OCCASIONALLY ENDING IN SERIOUS WRECKS WITH THE POSSIBILITY OF INJURY OR DEATH AMONG THE GENERAL PUBLIC.

RESEARCH METHODS

STRATEGIES

- **INTERPRETIVE:**
 - CASE STUDIES & LITERATURE REVIEW
- **QUALITATIVE:**
 - ANALYSIS OF SUCCESS & REVIEW OF INFORMATION
- **REPLICATION:**
 - HAND DRAWING, DIGITAL MODELS & LOGICAL ITERATIONS



PROJECT HISTORY

AMERICAN AUTOMOTIVE RACING HISTORY

- WHERE DID IT BEGIN?
 - AUTOMOTIVE RACING FIRST EMERGED DURING THE YEARS OF PROHIBITION.
 - SOMETIME BETWEEN 1920 AND THE EARLY 1930'S
 - RACING WAS THE NATURAL EVOLUTION OF THOSE WHO RAN ILLEGAL MOONSHINE.
 - THE NEED TO OUTRUN THE LOCAL POLICE DEVELOPED INTO AN ENTIRE CULTURE OF TUNING AND ALTERING PERSONAL VEHICLES FOR FASTER AND FASTER SPEEDS.
 - THIS FOSTERED A CULTURE OF COMPETITION BETWEEN LOCALS AND THEIR VEHICLES. WHO IS FASTER, YOU OR YOUR NEIGHBOR?



PROJECT HISTORY

THANK YOU NASCAR

- **NASCAR**

- THANKS TO A FEW DEVELOPERS AND THE ORGANIZATION OF WHAT CAME TO BE NASCAR. A FEW LOCAL RACEWAYS WERE BORN.
- THESE WERE MORE OFTEN THAN NOT SIMPLE OVAL TRACKS.
- OFTEN CONSISTING OF GRADED DIRT PATHS PLOWED INTO OPEN FARMING FIELDS.

- **USERS**

- AT FIRST THE RACES CONSISTED OF LOCALS RACING EACH OTHER.
- THIS WAS BENEFICIAL AS IT GAVE THE PUBLIC AN OUTLET FOR THE GROWING DESIRES FOR SPEED AND COMPETITION.

PROJECT HISTORY

THANK YOU NASCAR.....SOMEWHAT

- **EVOLUTION OF NASCAR**

- UNFORTUNATELY THAT SAME SMALL GROUP OF INVESTORS SAW A WAY TO GROW THEIR INVESTMENTS.

- **CHANGING USER BASE**

- AS ORGANIZED RACING EVENTS BEGAN TO GROW, IT SIMPLY PUSHED OUT THE LOCAL USER.
- THIS PROMOTED THE DEVELOPMENT OF STREET RACING AND BAD DRIVING BEHAVIORS.
- LASTING FOR SEVERAL DECADES, AS THE PUBLIC FILLED STANDS INSTEAD OF CARS.



PROJECT HISTORY

ADAPTING TO CHANGES

- **HOW IT EVOLVED: OUTSIDE INFLUENCES**

- AS COMMUNICATION AND AN INTRODUCTION OF CULTURE FROM OUTSIDE THE UNITED STATES BECAME MORE SIGNIFICANT IN EVERYDAY LIFE.
- SO DID THE INFLUENCE OF OUTSIDE SOURCES.
- THIS CHANGED THE FACE OF RACING.
- IT ADDED NEW AND INTERESTING TYPES OF RACING. FROM SIMPLE OVAL TRACKS TO MORE COMPLEX ROAD COURSES.

- **REINTRODUCTION TO USERS**

- IT ALSO BEGAN THE REINTRODUCTION OF THE PUBLIC USER.
- A SHIFT FROM WATCHING TELEVISED RACING TO PARTICIPATING BEGAN TO RISE AND QUICKLY.
- THE ONLY ISSUE BEING THE FINANCIAL COST AND SUSTAINABILITY FOR DEVELOPERS TO OPEN AND MAINTAIN OPERATIONS.



PROJECT HISTORY

LITERATURE REVIEW

- LITERATURE TAKEAWAYS

- A BROADER UNDERSTANDING OF THE OVERALL PROJECT CONTEXT
- AN INDICATION OF THE ISSUES THAT SURROUND THE FINANCIAL AND SUSTAINABLE ASPECTS OF THIS TYPOLOGY.
- A REASSURANCE THAT THE SOLUTION TO THE ISSUE CAN BE RESOLVED THROUGH THE USE OF DIFFERENT FACILITATING TYPOLOGIES AND ARCHITECTURE.



LITERATURE REVIEW

NURBURGRING | MAIN TAKEAWAYS

NURBURG, GERMANY

- **SITE IMPORTANCE**
 - SITE CHARACTERISTICS HELP TO ESTABLISH A SENSE OF PLACE.
- **GRANDSTAND DESIGN**
 - PROVIDED AN RANGE OF SEATING ARRANGEMENTS AND CONCERNS.
- **SITE PLAN LAYOUT**
 - ORIENTATION AND IMPORTANCE OF BUILDINGS RELATIONSHIPS TO EACH OTHER.
- **PROGRAMMATIC ORGANIZATION**
 - PROVIDED A BETTER UNDERSTANDING OF NEEDED SPACES.

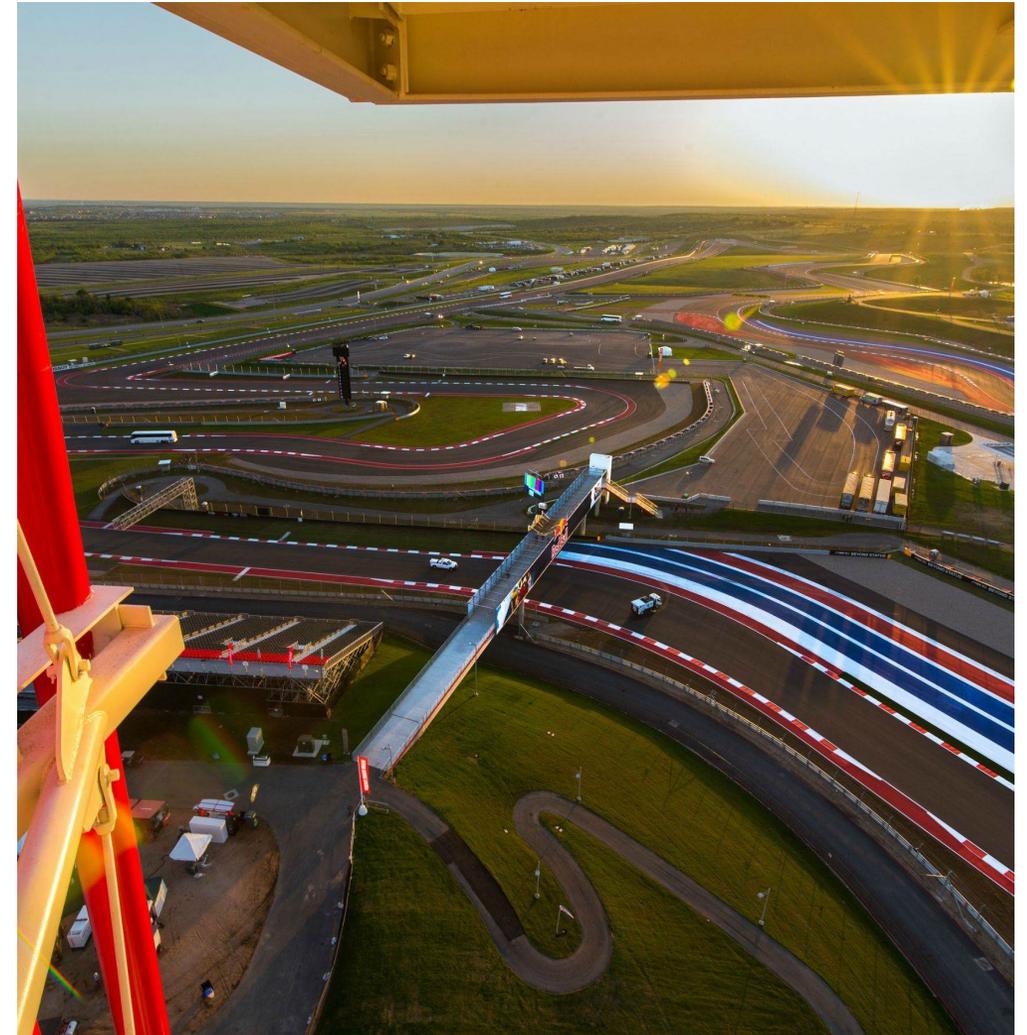


CASE STUDY

CIRCUIT OF AMERICAS | MAIN TAKEAWAYS

AUSTIN, TEXAS

- PROGRAMMATIC ELEMENTS
 - PROVIDED THE TYPICAL SPACES AND HOW THEY ARE USED.
- URBAN DEVELOPMENT
 - PROVIDED UNDERSTANDING OF DEVELOPING WITHIN AN URBAN CONTEXT.
- GRANDSTAND DESIGN
 - INFORMATION REGARDING AMOUNT OF SEATING.



CASE STUDY

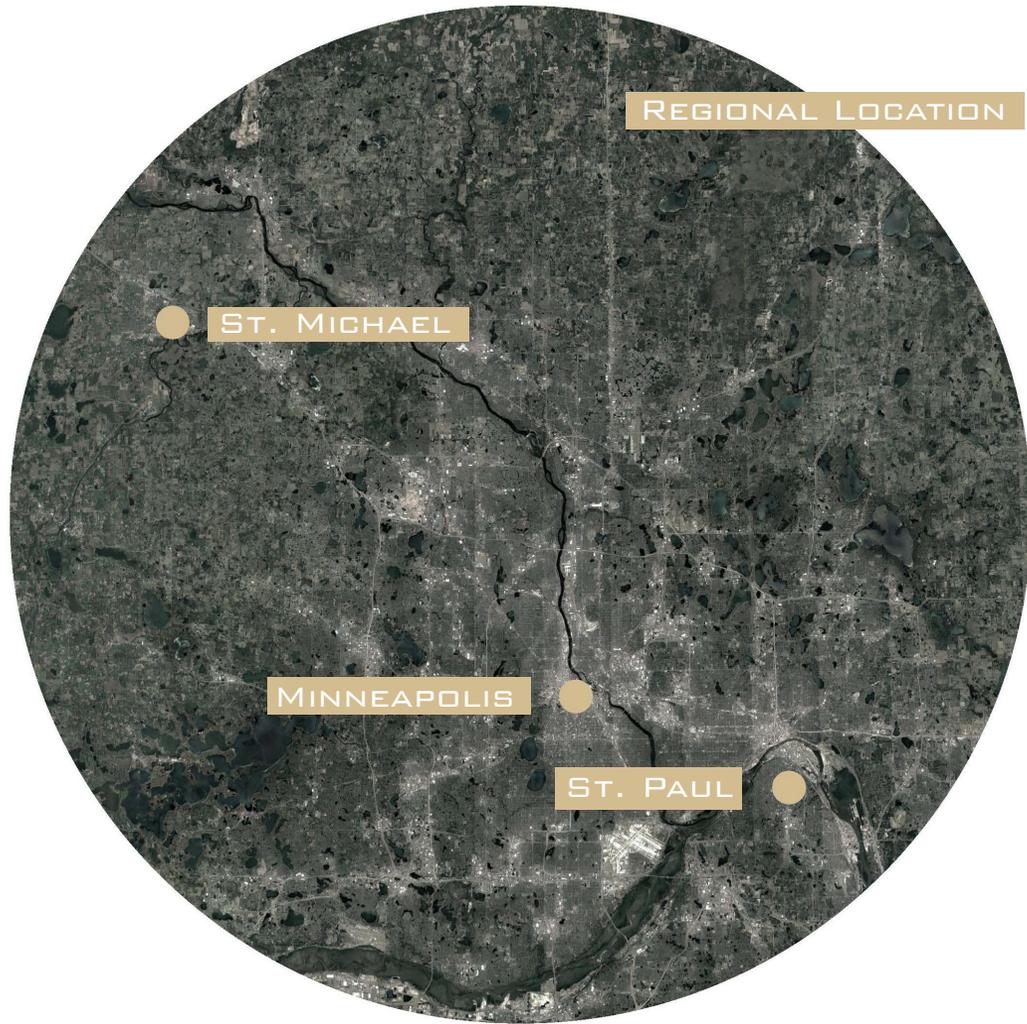
ALBERTA RACEWAY & RESORT | MAIN TAKEAWAYS

ALBERTA, CANADA

- PROGRAMMATIC ELEMENTS
 - CONTAINED ADDITIONAL ELEMENTS THAT MOST CLOSELY RESEMBLED MY GOALS.
- RURAL DEVELOPMENT
 - PROVIDED CONTEXT FOR DEVELOPING WITHIN AN RURAL SITE.
- SITE IMPORTANCE
 - IMPORTANCE OF SITE CHARACTERISTICS TO ADDITIONAL PROJECT ELEMENTS.
- LAYOUT & ORGANIZATION
 - RELATIONSHIP OF BUILDINGS TO EACH OTHER AND ROAD COURSE.



CASE STUDY



SITE INFORMATION

ST. MICHAEL, MN.

- **SITE IS ROUGHLY 400 ACRES**
 - SIZE REQUIREMENTS IN ACCORDANCE WITH SIZE OF PROJECT.
- **ABOUT 12+ ACRES OF HEAVILY FORESTED LAND**
- **APPROXIMATELY 2.25 MILES OF LAKE SHORE**
- **LOCATED WITHIN SHORT DISTANCE OF I94 & HIGHWAY 10**
 - SELF DETERMINED IMPORTANCE TO THE SUCCESS OF THE PROJECT.

LAKE PHOTO



ARIAL PHOTO



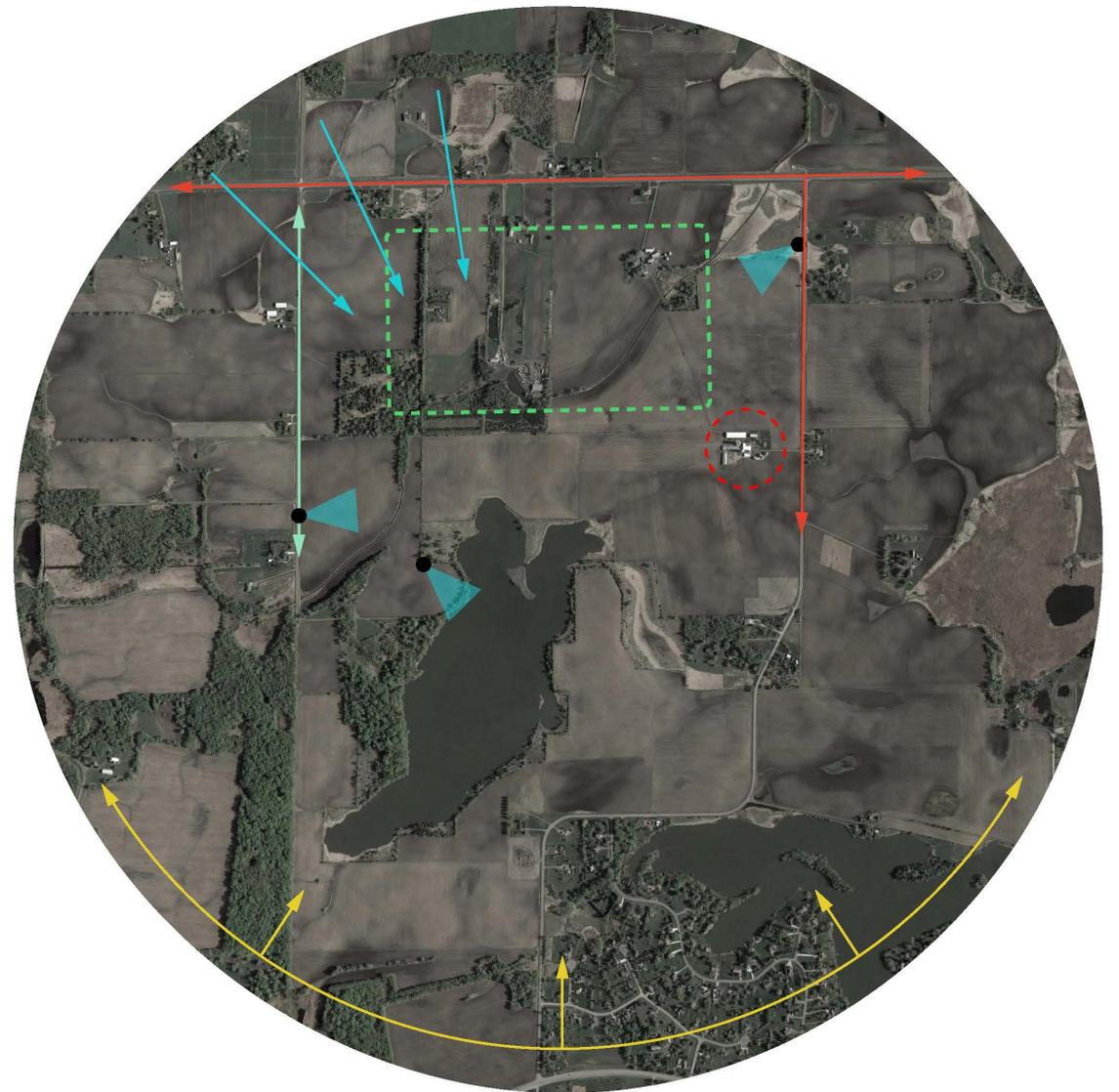
PLAINS PHOTO



SITE LOCATION

SITE ANALYSIS

- **MAJOR ROADS**
 - ROADS COLORED MARKED WITH RED ARROWS.
- **LEAST BUSY ROAD**
 - ROAD MARKED WITH LIGHT GREEN ARROW.
- **VIEWS**
 - BLUE TRIANGLE MARKERS INDICATE PROFFERED VIEWS.
- **WIND DIRECTION**
 - BLUE ARROWS INDICATING MOST SIGNIFICANT WIND FROM NORTH WEST.
- **SUN ORIENTATION**
 - YELLOW LINE SHOWS SOUTHERN SUN SWEEPING SITE EAST TO WEST.
- **DEMOLISHED FARMHOUSE**
 - RED DASHED CIRCLE INDICATES CURRENT DEMOLITION.
- **ROAD COURSE LOCATION**
 - GREEN BOX SHOWS LOCATION BEST UTILIZED BY THE ROAD COURSE.



DESIGN INSPIRATION

- **AUTOMOTIVE ROLL CAGE**

- THE AUTOMOTIVE ROLL CAGE IS AN ADDITION OFTEN ADDED TO RACING VEHICLES FOR SAFETY PROTECTION.
- THIS THEN BECAME A LOOSE TRANSLATION OF BOTH LINEAR AND TRIANGULAR FORMS.
- WHICH DEVELOPED INTO THE TWO MAIN FORMS, DESIGN ELEMENTS AND MATERIAL CHOICES MADE IN THE DESIGN PROCESS.

- **SITE CONTEXT**

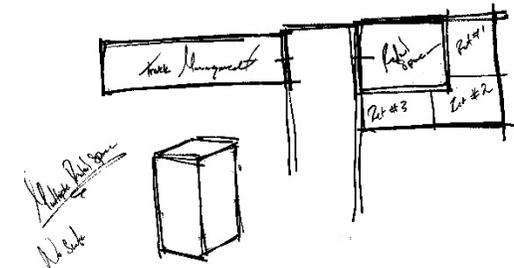
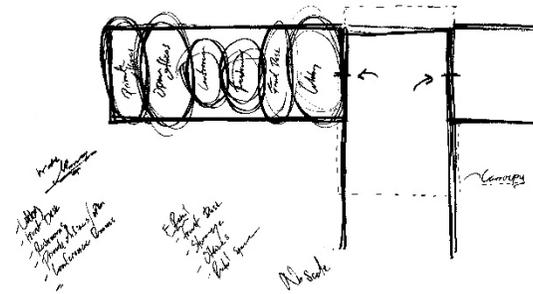
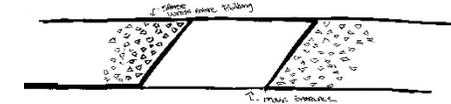
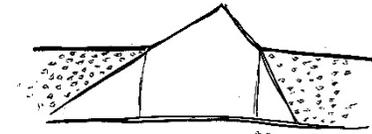
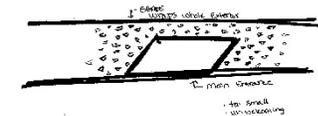
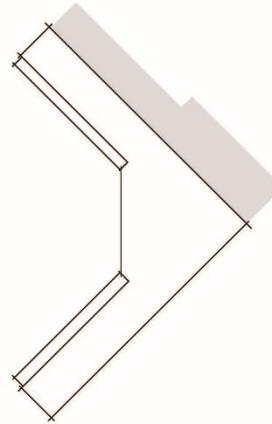
- THE SITE WAS UTILIZED AS INSPIRATION FOR THE MATERIALS, VIEWS AND ORIENTATION OF BOTH THE EXTERIORS AND INTERIORS OF ALL BUILDINGS.



REGISTRATION & RETAIL

KEY FUNDAMENTALS OF THE DESIGN

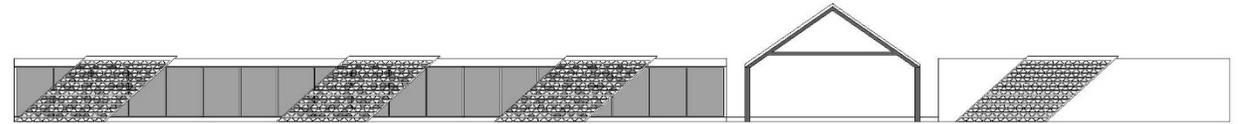
- UTILIZATION OF DESIGN INSPIRATION
- FRAMING VIEWS
- DAYLIGHTING NEEDS
- PROTECTION FROM WIND
- CREATING UNITY BETWEEN BOTH USES



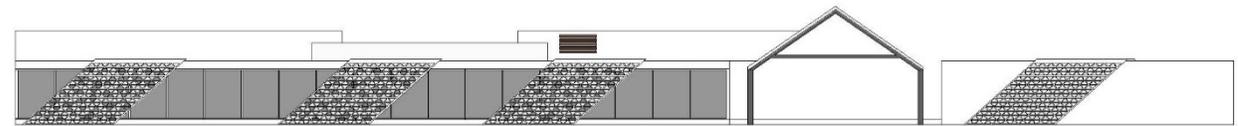
REGISTRATION & RETAIL

WHAT WAS ESTABLISHED

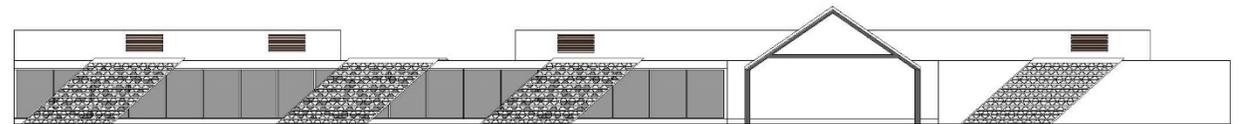
- **LOCATION ON SITE**
 - WESTERN EDGE OF SITE.
 - CREATES GLIMPSES OF SITE.
 - UTILIZES A THE LEAST BUSY ROAD.
- **CREATING A SENSE OF ENTRY**
 - BY ALLOWING THE DESIGN TO FRAME THE VIEW INTO THE CENTER OF THE SITE.
- **FORM DEVELOPMENT**
 - LINEAR FORM.
 - PROMINENT ENTRY.
- **PROGRAMMATIC DEVELOPMENT**
 - LINEAR LAYOUT OF SPACES.



- **FORM DEVELOPMENT: ARCHED ENTRY**



- **FORM DEVELOPMENT: VAULTED CEILINGS**

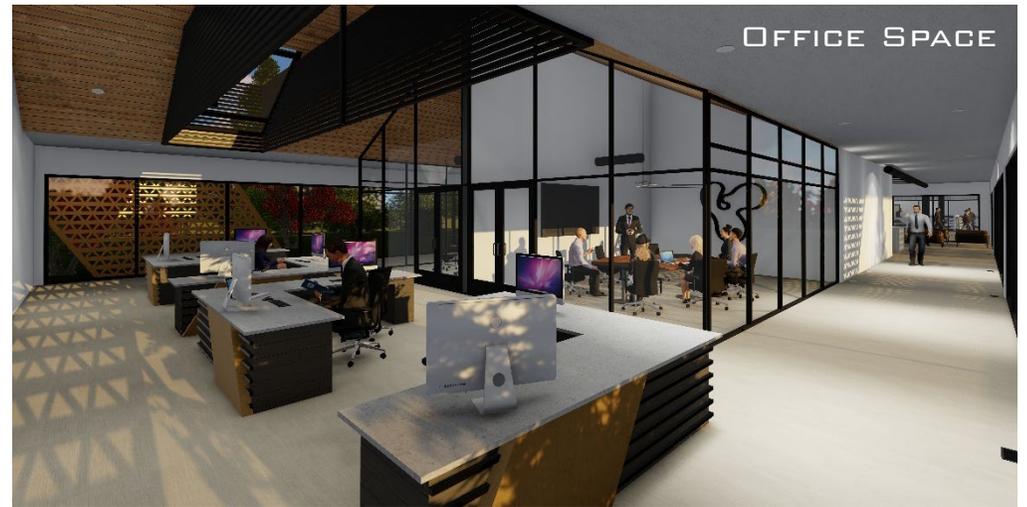


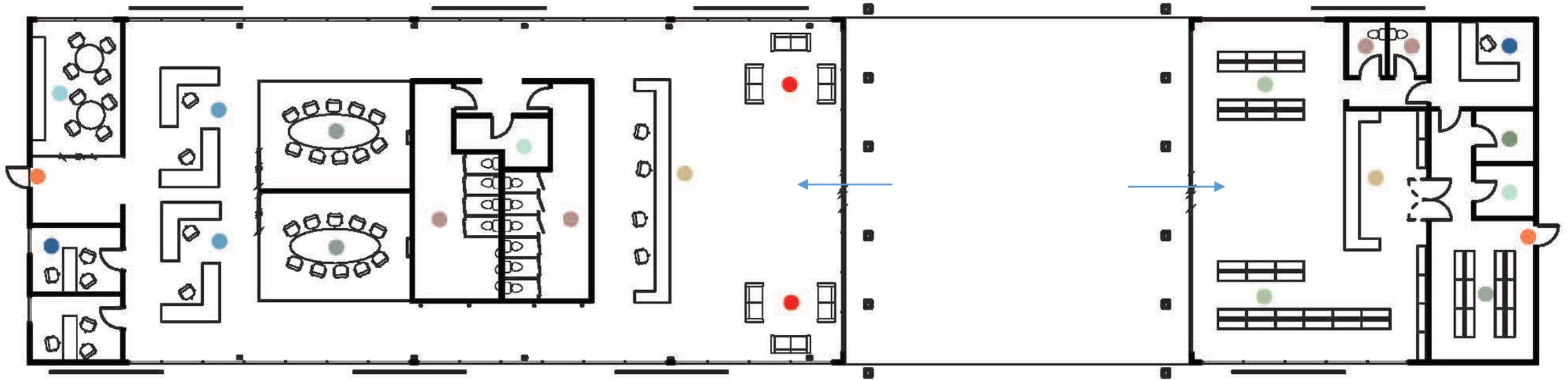
- **FORM DEVELOPMENT: MIRRORED ENTRY & CEILINGS**

REGISTRATION & RETAIL

DESIGN

- **DESIGN INSPIRATION**
 - CREATING AND MAINTAINING A CONSISTENT DESIGN AESTHETIC.
- **INCORPORATION OF RETAIL**
 - THE DESIGN CONCLUDING WITH AN INTEGRATION OF RETAIL SPACE WITH TYPICAL SPACES RELATED TO THE RACEWAY.
- **LAYOUT**
 - THE LAYOUT CONSISTS OF PRIVATE, CLOSED SPACES MAKING UP THE CENTER OF THE PLAN.
 - THIS PROVIDES AMPLE DAYLIGHTING
 - AND CROSS UTILIZATION OF MULTIPLE SPACES FOR DIFFERENT USES.



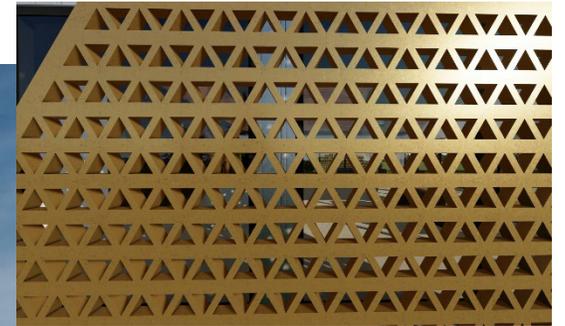


REGISTRATION & MANAGEMENT

- WAITING LOBBY
- FRONT DESK
- RESTROOMS
- CONFERENCE | CLASS ROOMS
- OPEN OFFICES
- PRIVATE OFFICES
- BREAK ROOM
- MECHANICAL ROOM
- EMERGENCY EXIT

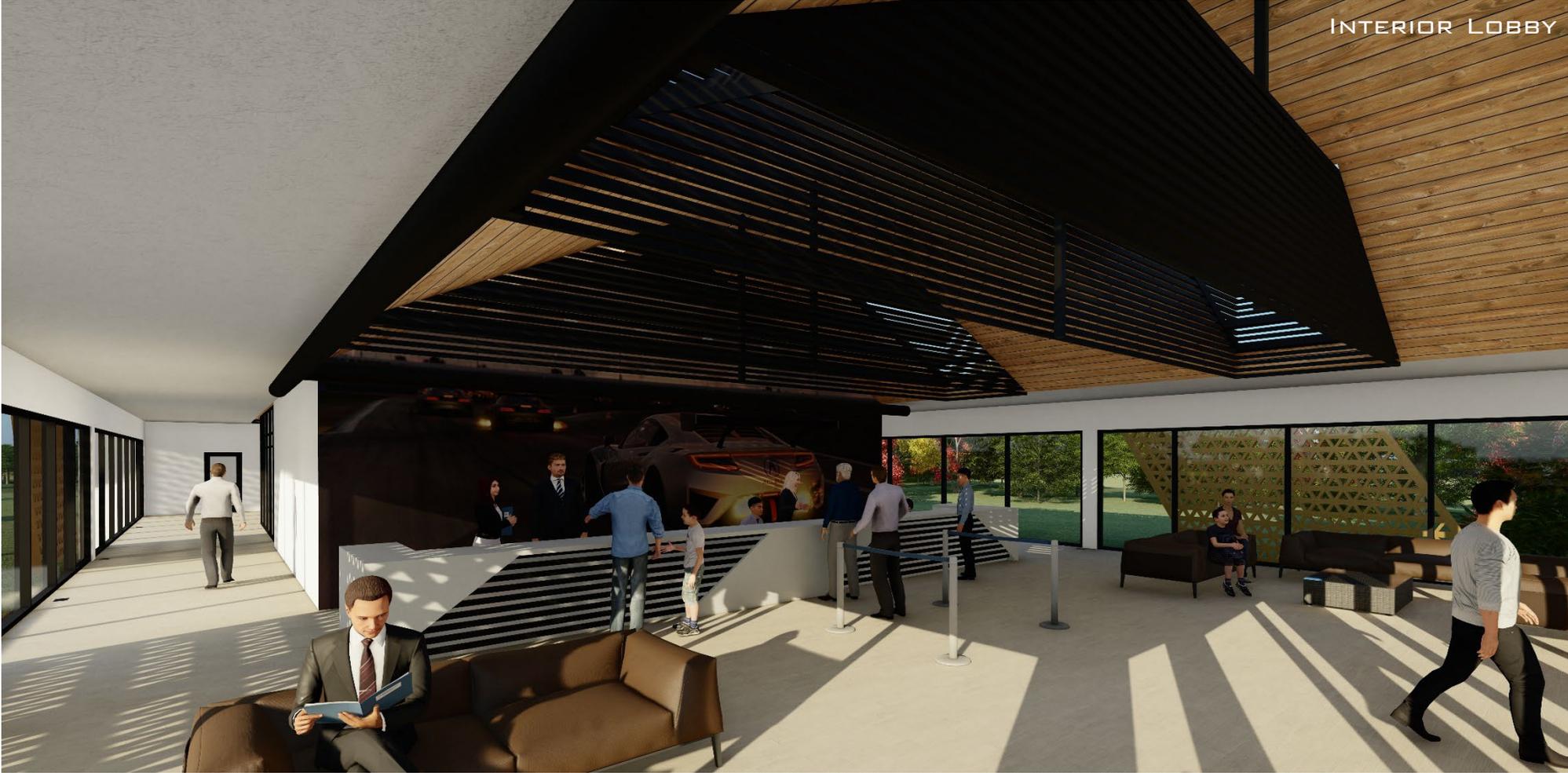
AUTOMOTIVE RETAILER

- RETAIL SPACE
- FRONT DESK
- STORAGE ROOM
- MECHANICAL ROOM
- OFFICE STORAGE
- PRIVATE OFFICE
- RESTROOMS



SHADE DETAIL

EXTERIOR FACADE

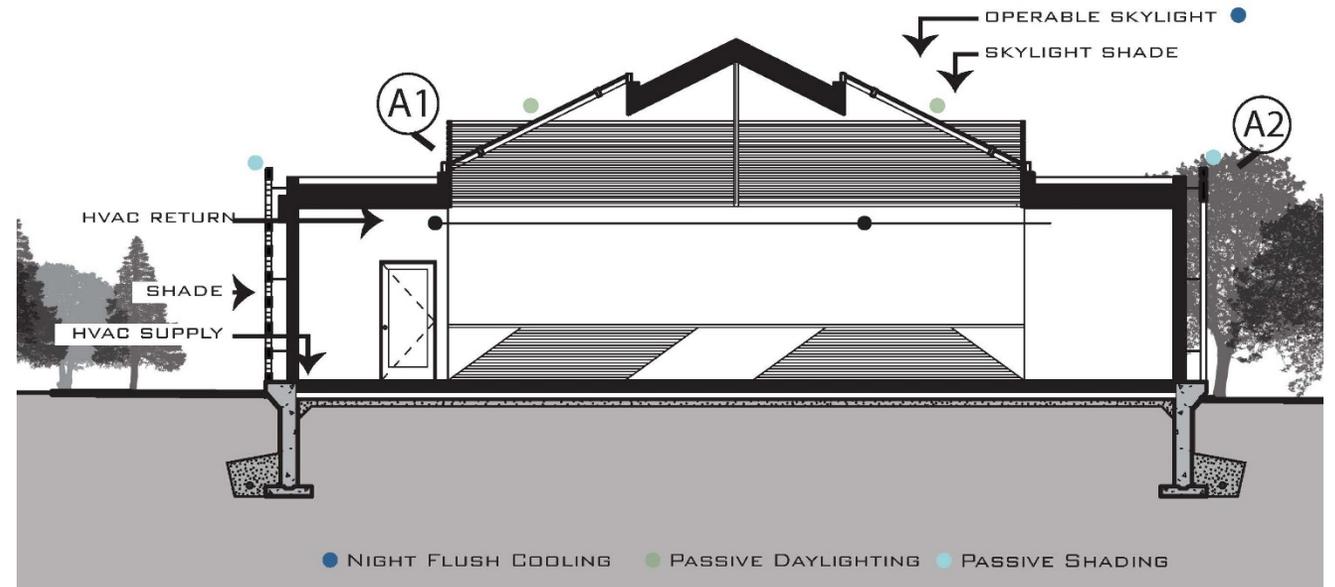


INTERIOR LOBBY

SUSTAINABILITY FEATURES

DESIGN SOLUTION

- **NIGHT FLUSH COOLING**
 - OPERABLE SIDE WINDOWS AND SKYLIGHTS ALLOW.
- **PASSIVE DAYLIGHTING**
 - SUBSTITUTING ACTIVE LIGHTING SYSTEMS WITH DAYLIGHT LESSEN THE ENERGY NEEDED DURING OPEN HOURS.
- **PASSIVE SHADING**
 - EXTERIOR SHADES PROVIDE BLOCKAGE FROM EXCESSIVE DAYLIGHT.
 - DESIGNED TO BE POSITIONED TO SHADE KEY INTERIOR SPACES WHEN NEEDED.
- **PHOTOVOLTAIC SHINGLES**
 - USED AS AN ADDITIONAL SOURCE OF ELECTRICITY TO POWER ALL ELECTRONIC USES WITH THE BUILDING.



SPECTATOR SEATING

KEY FUNDAMENTALS OF THE DESIGN

- CONTINUATION OF DESIGN CONCEPTS.
 - DESIGN CONCEPTS ESTABLISHED IN PRIOR BUILDINGS.
- FRAMING VIEWS
 - LINEAR APPROACH.
 - FRAMES PARTICULAR VIEWS.
- PROTECTION FROM WIND
 - THE SEATING UTILIZES NATURAL WIND BARRIERS FROM FORESTED PORTIONS OF THE SITE.



GRANDSTAND DESIGN



CONCESSIONS AREA



GRANDSTAND

HOTEL

KEY FUNDAMENTALS OF THE DESIGN

- CONTINUATION OF DESIGN CONCEPTS.
 - DESIGN CONCEPTS ESTABLISHED IN PRIOR BUILDINGS.
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HOTEL DESIGN

QUESTIONS?