

INTERDISCIPLINARY RESEARCH CENTER

BIOENGINEERING

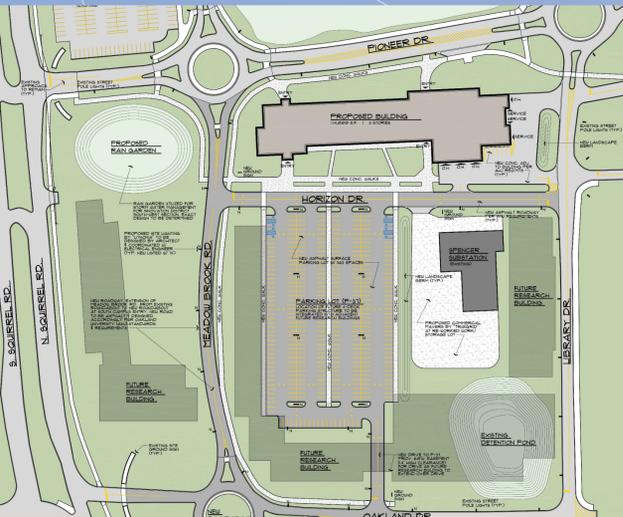
COMPUTER SCIENCE

CYBER SECURITY

ENVIRONMENTAL SCIENCE

FASTENING & JOINING

ROBOTICS



PROPOSED SITE PLAN

OAKLAND UNIVERSITY



PROJECT DESCRIPTION

LOCATION: OAKLAND UNIVERSITY, ROCHESTER, MI.
"INNOVATION DISTRICT"
SP - SPECIAL PURPOSE

SITE ZONING: SP - SPECIAL PURPOSE

SITE AREA: PROJECT SCOPE: 975,638 S.F. OR 22 ACRES+/-
CAMPUS TOTAL: 62,769,960 S.F. OR 1,441 ACRES+/-
BUILDING AREA: 140,000 S.F. GROSS

BUILDING HEIGHT: 3 STORIES, PARTIAL BASEMENT, 52 FEET

USE GROUP: E - EDUCATIONAL

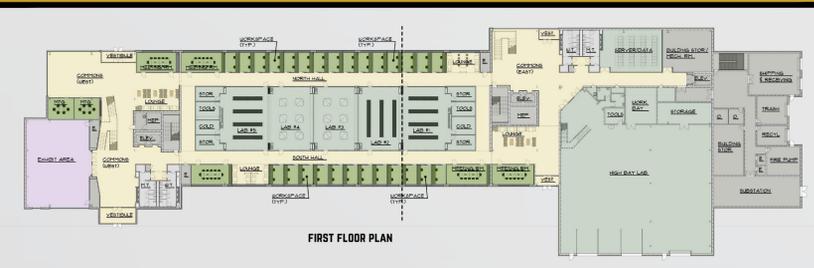
CONSTRUCTION: IIB

FIRE SUPPRESSION: FULL

OCCUPANCY LOAD: 1,161 OCCUPANTS

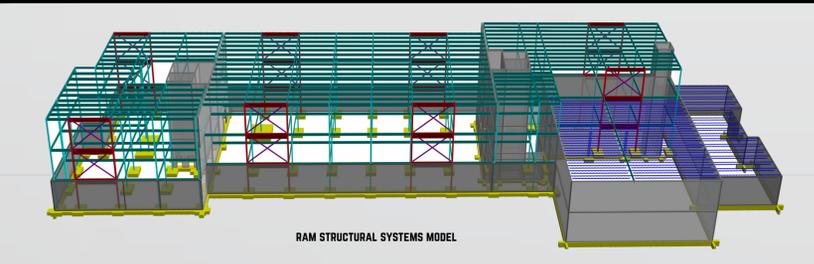
OAKLAND UNIVERSITY IS LOCATED IN THE CITY OF ROCHESTER AND ON THE BORDER OF AUBURN HILLS COMPRISING OF 1,443 ACRES OF LAND. THE UNIVERSITY HAS A STRATEGIC VISION WITH GOALS, GUIDELINES, PHYSICAL AND SOCIAL APPEAL. A NEAR TERM DEVELOPMENT PROJECT FOR THE UNIVERSITY INCLUDES THE PROPOSED INNOVATION DISTRICT UTILIZED FOR ALL RESEARCH AND DEVELOPMENT PROGRAMS. TEAM 5 PROPOSES THE FIRST LANDMARK BUILDING TO BE PROVIDED ON THE INNOVATION DISTRICT GROUNDS. WORKING WITH THE UNIVERSITY, THE DESIGN TEAM HAD DEVELOPED THE INTERDISCIPLINARY RESEARCH CENTER DEDICATED TO THE STUDENTS, FACULTY, AND INDUSTRY PARTNERS OF THE EXPANDING ACADEMIC PROGRAMS OF BIOENGINEERING, COMPUTER SCIENCE, CYBER SECURITY, ENVIRONMENTAL SCIENCE, FASTENING AND JOINING AND ROBOTICS.

ARCHITECTURE



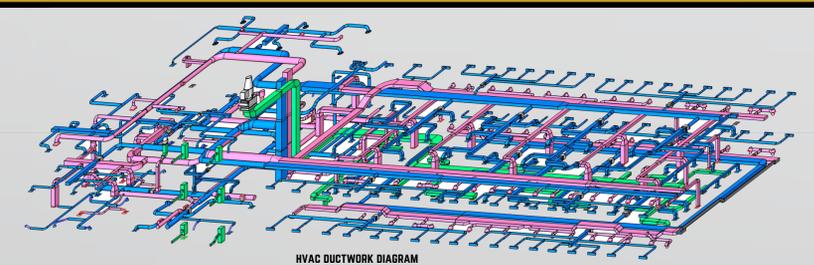
FIRST FLOOR PLAN

STRUCTURAL



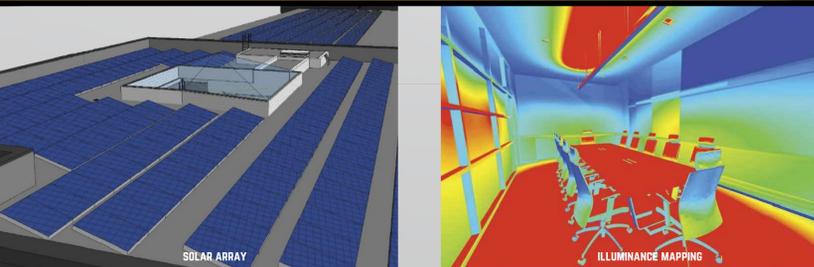
RAM STRUCTURAL SYSTEMS MODEL

MECHANICAL



HVAC DUCTWORK DIAGRAM

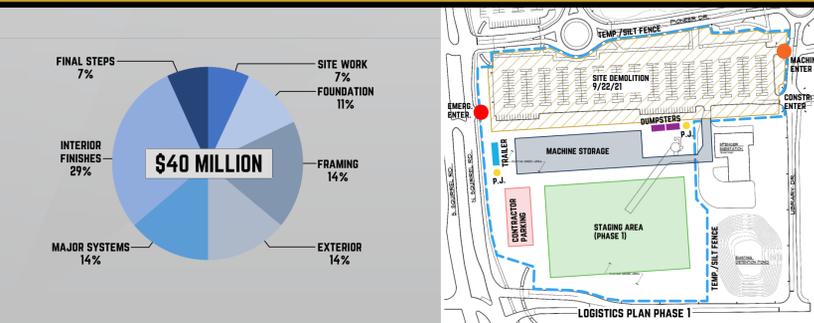
ELECTRICAL



SOLAR ARRAY

ILLUMINANCE MAPPING

CONSTRUCTION



ARCHITECTURE	STRUCTURAL	MECHANICAL	ELECTRICAL	CONSTRUCTION
<ul style="list-style-type: none"> CODE ANALYSIS ORDINANCE ANALYSIS FACILITY RESEARCH PROGRAM DESIGN SITE & UTILITY PLANS FACADE DESIGN SYSTEM INTEGRATIONS TECHNICAL DRAWINGS 	<ul style="list-style-type: none"> CODE ANALYSIS ENVIRONMENTAL LOADS FOUNDATION DESIGN STEEL FRAMING DIAPHRAGM DESIGN LATERAL SYSTEMS CONNECTIONS TECHNICAL DRAWINGS 	<ul style="list-style-type: none"> CODE ANALYSIS MECHANICAL LOADS VAV & AHU SYSTEMS HYDRONIC SYSTEMS GEOHERMAL DESIGN SANITARY & WATER FIRE SUPPRESSION TECHNICAL DRAWINGS 	<ul style="list-style-type: none"> CODE ANALYSIS ELECTRICAL LOADS POWER DISTRIBUTION PHOTOVOLTAIC DESIGN EGRESS LIGHTING LIGHTING DESIGN DAYLIGHT INTEGRATION TECHNICAL DRAWINGS 	<ul style="list-style-type: none"> CODE ANALYSIS ORDINANCE ANALYSIS COST ESTIMATE LOGISTICS PLANNING PERMITTING PLANS QUALITY MANAGEMENT SUSTAINABILITY PLANS TECHNICAL DOCUMENTS

COLLABORATION AND PROFESSIONAL INPUT

COLLABORATIVE GROUP	PROFESSIONAL DISCIPLINES	COLLABORATION METHODS
<ul style="list-style-type: none"> 40 PROFESSIONAL ENGINEER MENTORS 20 UNIVERSITY FACULTY 5 UNIVERSITY FACULTY DISCIPLINE ADVISORS 2 CLIENT CONTACTS 1 PROFESSIONAL ENGINEER TEAM ADVISOR 1 UNIVERSITY FACULTY TEAM ADVISOR 	<ul style="list-style-type: none"> STRUCTURAL ENGINEERING GEOTECHNICAL ENGINEERING CIVIL ENGINEERING MECHANICAL ENGINEERING ELECTRICAL ENGINEERING LIGHTING DESIGN CONSTRUCTION ENGINEERING TRANSPORTATION ENGINEER 	<ul style="list-style-type: none"> PRESENTATIONS BREAK-OUT SESSIONS TEAM ADVISOR MEETINGS SUB-DISCIPLINE MEETINGS PROFESSIONAL GUIDANCE TEAM WORK SESSIONS ONLINE VIDEO COMMUNICATIONS VARIOUS RESEARCH METHODS

OVER 100 HOURS OF PROFESSIONAL AND UNIVERSITY FACULTY ASSISTANCE WITH CAPSTONE TEAMS

PUBLIC HEALTH, SAFETY, AND WELFARE

HEALTH AND WELFARE	SAFETY
<ul style="list-style-type: none"> AIR FILTRATION AIR DISINFECTION INCREASED AIR CHANGES AIR PURGING SYSTEM EXHAUST AIR SYSTEM WATER FILTRATION SYSTEM NOISE POLLUTION POWER QUALITY 	<ul style="list-style-type: none"> ADEQUATE LIGHTING DAYLIGHT INTEGRATION LIGHTING CONTROLS OPEN FLOOR PLAN PUBLIC RESTROOMS SAFE MATERIALS REDUCED EMISSIONS DUST CONTROL

KNOWLEDGE AND SKILLS GAINED

SKILLS & KNOWLEDGE	SOFTWARE UTILIZED
<ul style="list-style-type: none"> METHOD OF OPERATIONS DISCIPLINE INTEGRATION PROJECT SPECIFIC NEEDS EDUCATION FACILITY DESIGN INDUSTRY STANDARDS IDENTIFYING PROBLEMS TIME MANAGEMENT STRESS MANAGEMENT 	<ul style="list-style-type: none"> ADOBE ACROBAT ADOBE PHOTOSHOP AUTODESK 3DS MAX AUTODESK AUTOCAD AUTODESK REVIT AUTODESK VISUAL LIGHTING MICROSOFT EXCEL NAVISWORKS MANAGE

PROJECT TIMELINE

SEPTEMBER, 2020

TEAM CONTRACTS

OCTOBER, 2020

PROJECT PROPOSAL

NOVEMBER, 2020

SCHEMATIC DESIGN

DECEMBER, 2020

TECHNICAL REPORT 1

JANUARY, 2021

DESIGN DEVELOPMENT

FEBRUARY, 2021

TECHNICAL REPORT 2

MARCH, 2021

CONSTRUCTION DOCUMENTATION

APRIL, 2021

TECHNICAL REPORT 3