MANCHESTER SCHOOL OF ARCHITECTURE

platform

MArch Atelier 2018/19

MANCHESTER SCHOOL OF ARCHITECTURE

The Flexi-SpACE proposal involves developing a system of innovative modules that interconnect to create a scalable structural system around the existing building that is utilised as a core. This system is highly adaptable to multiple uses, from labs for scientific research, to a range of uses from offices, residential and commercial. The final structure is enveloped in an external cross laminated timber structure that can also scale with the modules. This external structure allows the creation of soft spaces between the hard, lab/office/commercial spaces and is finished with a dynamic, parametric façade that provides solar shading as well as creating the openings to the building. The entire structure, from the modules to the façade, is entirely modular and can easily be constructed and deconstructed with minimal skill through the use of simple, mortis and tenon joints with peg fixings. Through the use of these simple joints and sustainable materials, with our focus on timber structures, we can create a building that is highly adaptable and recyclable throughout its life cycle.

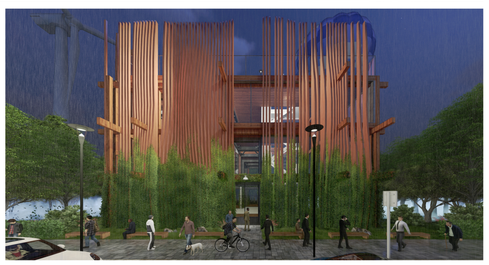
BAMB - Building As Material Banks - is a reversible building design competition which concentrates on the need for a more sustainable future through the reuse, redistribution, refurbishment, re-manufacturing and high quality recycling of buildings as components. The implementation of this means materials stay in circulation longer which significantly reduced waste and the use of virgin materials.

BAMB is intending on developing and integrating tools including reversible design and material passports in order to enable a 'systmeic shift' in the building sector.

Team 53

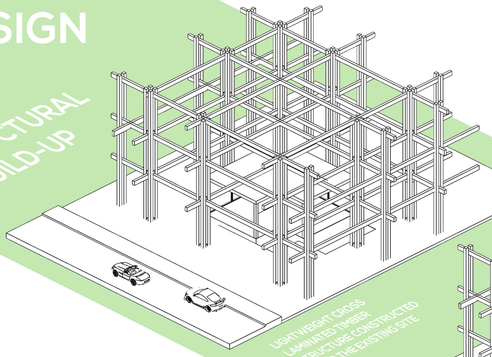
Joseph Shenton
Khe Lyn
Gabriel Wyderkiewicz

BAMB
BUILDINGS AS MATERIAL BANKS

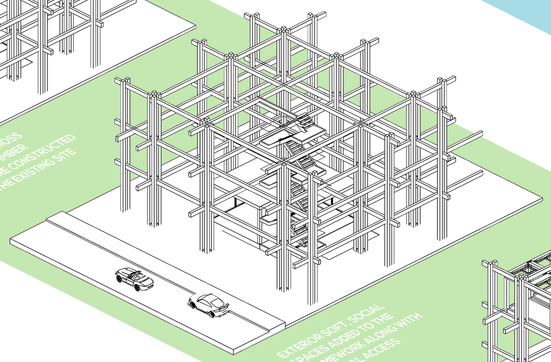


STRUCTURAL DESIGN

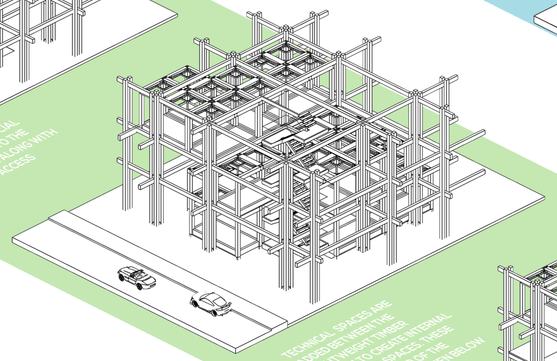
ON-SITE STRUCTURAL BUILD-UP



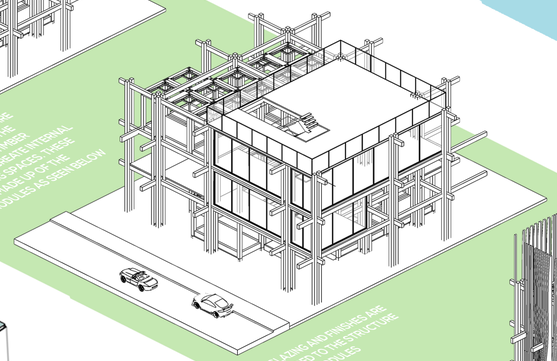
LIGHTWEIGHT CROSS LAMINATED TIMBER STRUCTURE CONSTRUCTED OVER THE EXISTING SITE



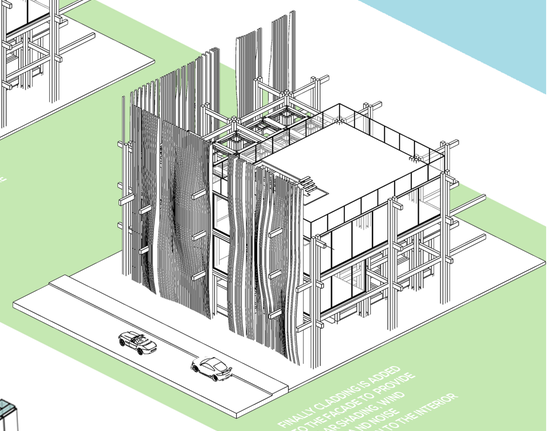
EXTERIOR SOFT SOCIAL SPACES ADDED TO THE FRAMEWORK ALONG WITH VERTICAL ACCESS



TECHNICAL SPACES ARE ADDED BETWEEN THE LIGHTWEIGHT TIMBER FRAME TO CREATE INTERNAL WORKING SPACES. THESE ARE MADE UP OF THE MODULES AS SEEN BELOW

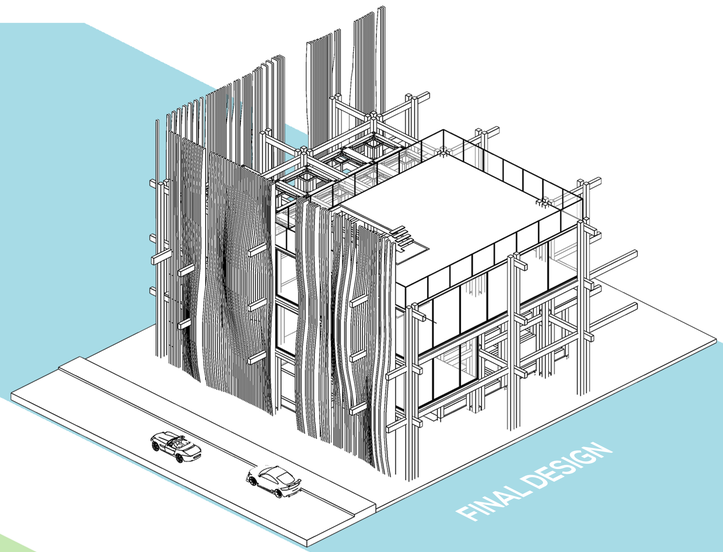


GLAZING AND FINISHES ARE ADDED TO THE STRUCTURE AND MODULES

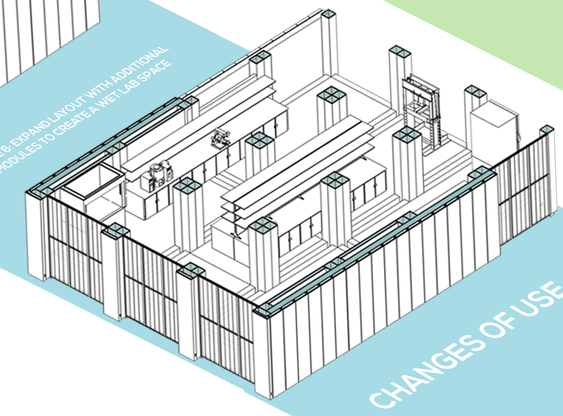


FINALLY CLADDING IS ADDED TO THE FACADE TO PROTECT FROM SOLAR SHADING, WIND BREAKS AND NOISE REDUCTION TO THE INTERIOR

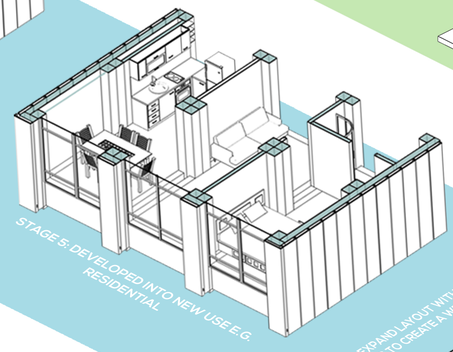
FINAL DESIGN



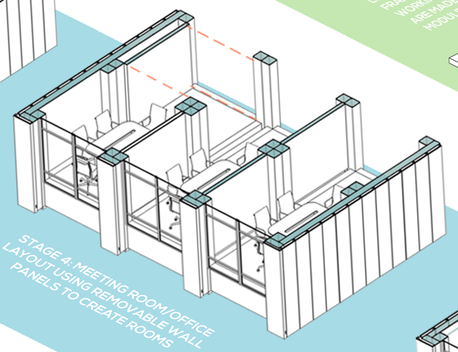
CHANGES OF USE



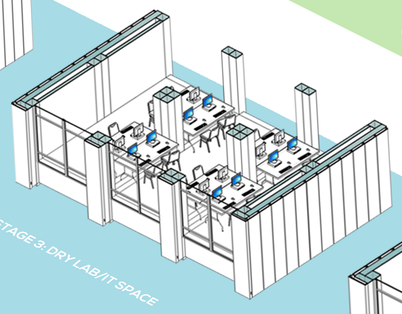
STAGE 6: EXPAND LAYOUT WITH ADDITIONAL MODULES TO CREATE A WET LAB SPACE



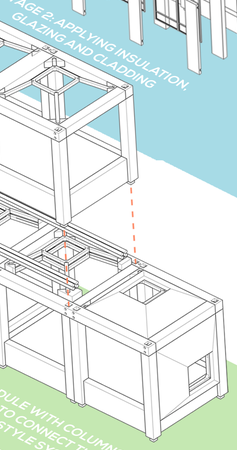
STAGE 5: DEVELOPED INTO NEW USE E.G. RESIDENTIAL



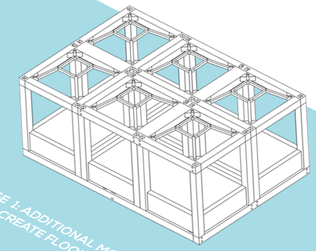
STAGE 4: MEETING ROOM/OFFICE LAYOUT USING REMOVABLE WALL PANELS TO CREATE ROOMS



STAGE 3: DRY LAB/IT SPACE

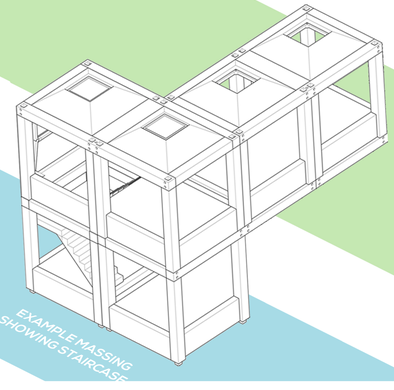


STAGE 2: APPLYING INSULATION, GLAZING AND CLADDING

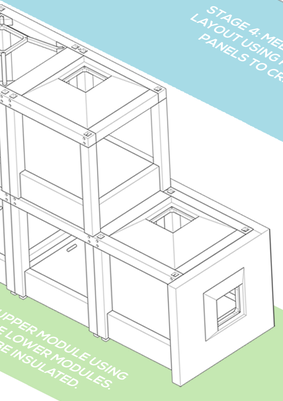


STAGE 1: ADDITIONAL MODULES TO CREATE FLOOR PLAN

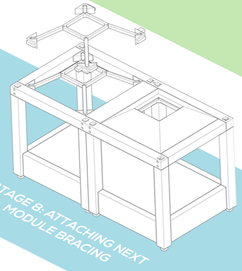
BREAKDOWN OF RE-USABLE MODULE STRUCTURE



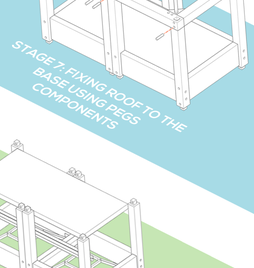
EXAMPLE MASSING SHOWING STAIRCASE



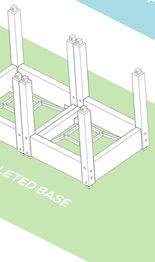
STAGE 10: ATTACH THE UPPER MODULE USING PEG COMPONENTS TO THE LOWER MODULES. STRUCTURE CAN THEN BE INSULATED.



STAGE 8: ATTACHING NEXT MODULE BRACING



STAGE 7: FIXING ROOF TO THE BASE USING PEGS COMPONENTS



STAGE 6: ATTACHING THE ROOF TO THE BASE

STAGE 5: CONSTRUCTING THE ROOF

STAGE 4: INSERT SERVICES AND FLOOR FINISH

STAGE 3: COMPLETED BASE

STAGE 2: EACH COMPONENT SLOTS INTO THE COLUMNS VIA MORTIS AND TENON JOINTS

STAGE 1: STEEL BRACING

STAGE 9: ALIGN UPPER MODULE WITH COLUMNS OF TWO LOWER MODULES TO CONNECT THE MODULES IN A 'LEGO BRICK' STYLE SYSTEM