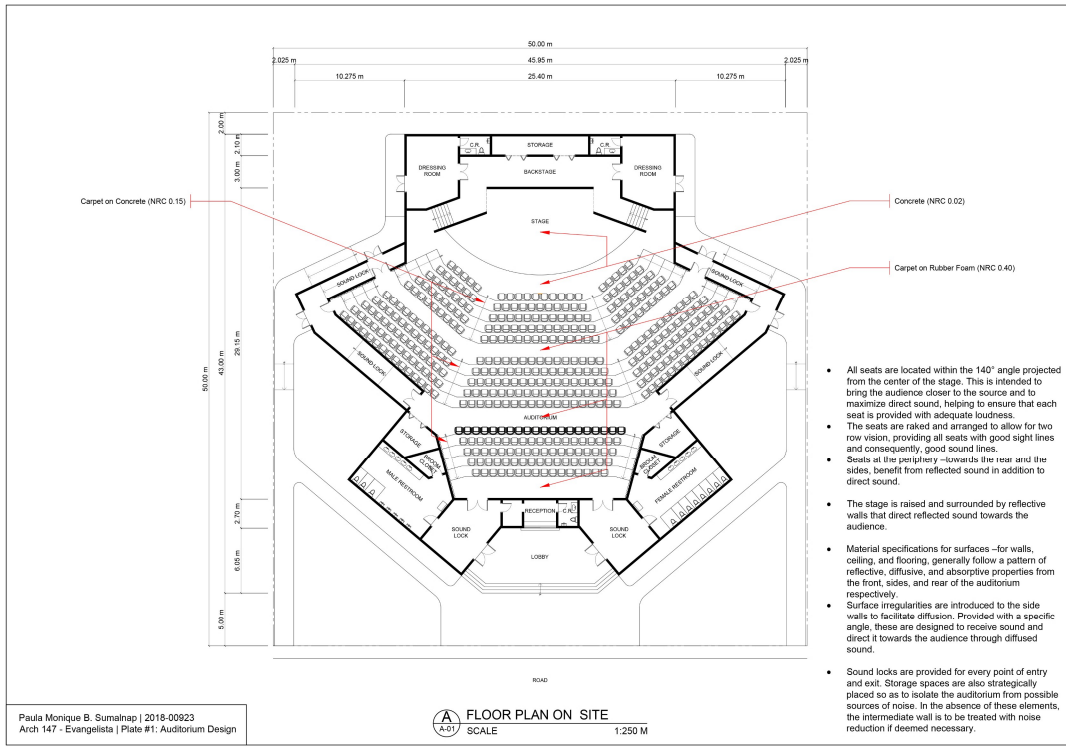




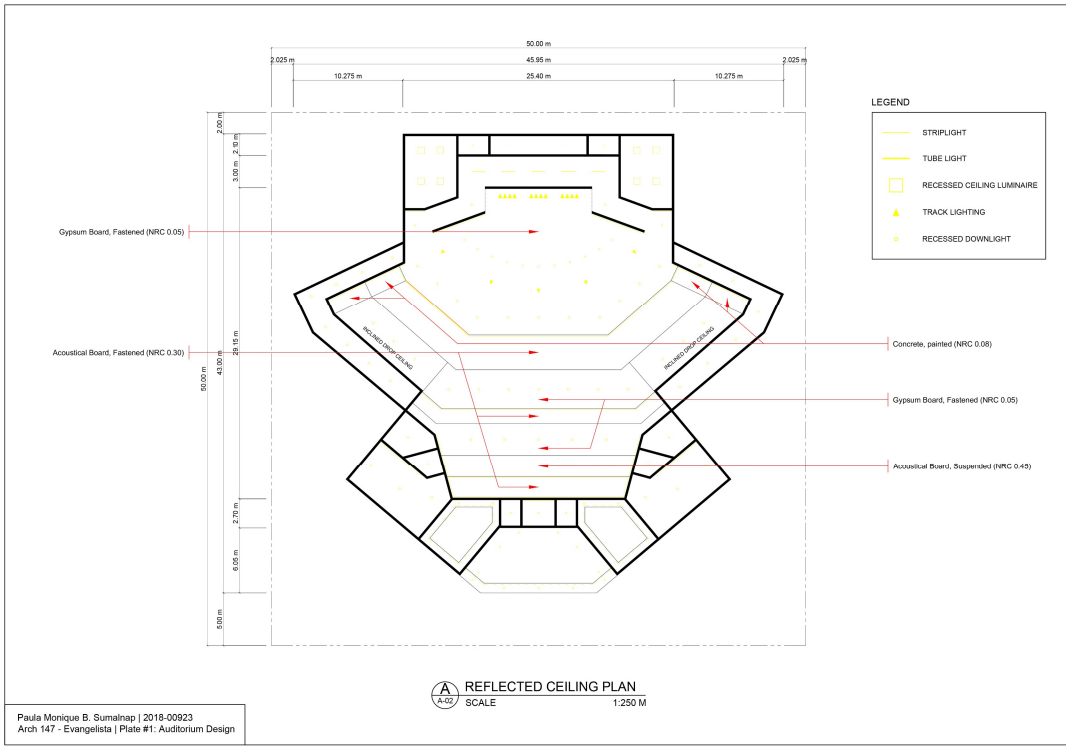
RIPPLE

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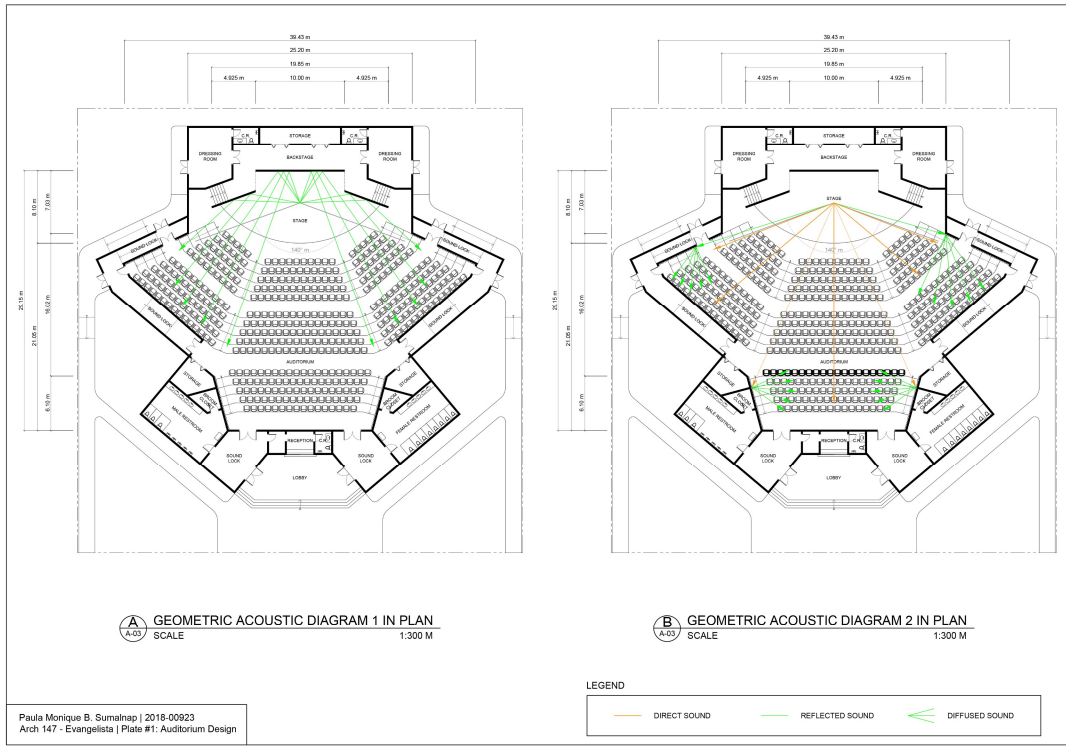
The form of the auditorium draws inspiration from the ripple effect, a series of waves that emanate from a single source. In plan, it shows an increasing array of seats that mimic the path of sound, bringing the audience closer to maximize the benefit of direct sound. The ceiling likewise alludes to waves and are specifically angled to render beneficial sound reflections toward the audience. In the same way, learning is not to be confined within the auditorium's space. Rather, it is something to take with you so as to impart to others or apply in one's life—making its own ripple effect.



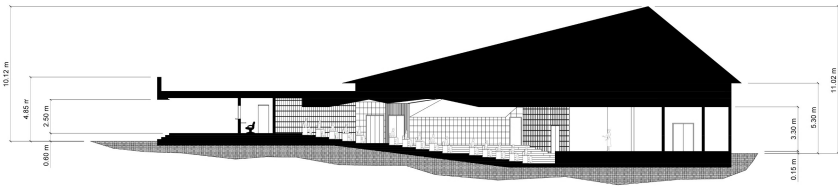
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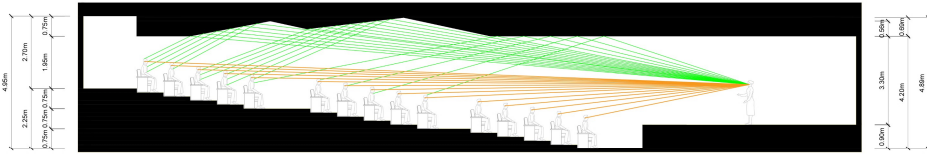
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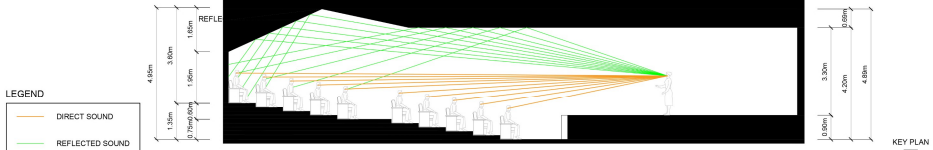
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A LONGITUDINAL SECTION
SCALE 1:200 M



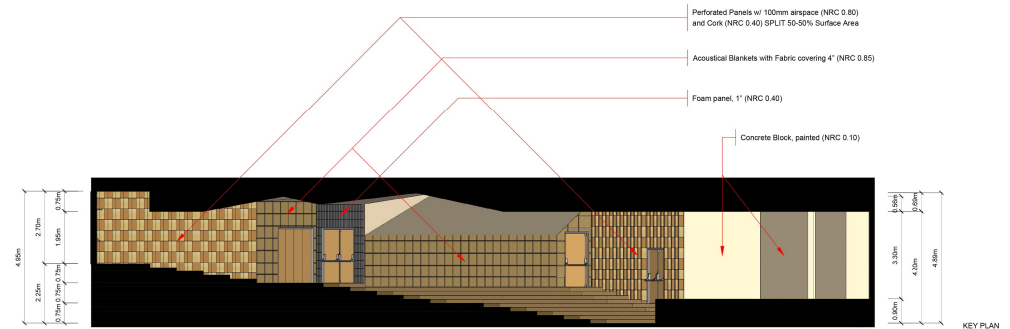
B GEOMETRIC ACOUSTIC DIAGRAM 1 IN SECTION
SCALE 1:100 M



C GEOMETRIC ACOUSTIC DIAGRAM 2 IN SECTION
SCALE 1:100 M

LEGEND
DIRECT SOUND
REFLECTED SOUND

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A BLOW UP DETAIL OF SIDE WALLS
SCALE 1:100 M

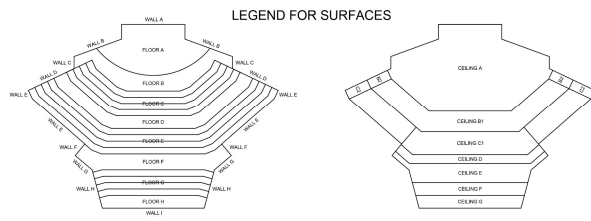


B MATERIAL SPECIFICATIONS
SCALE NTS

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COMPUTATION OF ABSORPTION AND MATERIAL SPECIFICATIONS PER SURFACE

SURFACE	AREA (mm ²)	AREA (m ²)	PROPERTY	MATERIAL	NRC	QUANTITY	ABSORPTION
CEILING							
A	25942239	256.94	Reflective	Gypsum Board, fastened	0.05	1	12.85
B1	10868867	108.09	Absorptive	Acoustical Board, fastened	0.30	1	32.43
B2	5422000	5.42	-	Concrete, painted	0.08	2	9.87
C1	14576184	145.70	Reflective	Gypsum Board, fastened	0.05	1	7.29
C2	5764229	5.76	-	Concrete, painted	0.08	2	9.82
D	88691712	88.69	Absorptive	Acoustical Board, fastened	0.30	1	10.11
E	6167023	6.17	Reflective	Gypsum Board, fastened	0.05	1	3.16
F	3353448	3.35	Absorptive	Acoustical Board, suspended	0.45	1	15.92
G	5323905	5.32	Absorptive	Acoustical Board, fastened	0.30	1	9.97
FLOOR							
A	66161005	66.10	Reflective	Concrete	0.02	1	1.92
B	46631260	46.63	Reflective	Concrete	0.02	1	1.33
C	11622529	116.23	Absorptive	Carpet on Concrete	0.15	1	17.43
D	72873811	72.87	Absorptive	Carpet on Rubber Foam	0.40	1	29.07
E	17447018	174.47	Absorptive	Carpet on Concrete	0.15	1	26.17
F	61413610	61.41	Absorptive	Carpet on Rubber Foam	0.40	1	24.57
G	72910580	72.91	Absorptive	Carpet on Concrete	0.15	1	10.84
H	32637019	32.64	Absorptive	Carpet on Rubber Foam	0.40	1	13.05
WALL							
A	30009000	30.00	Reflective	Block	0.05	1	1.05
B	18044633	18.04	Reflective	Concrete Block, painted	0.10	2	3.61
C	7969621	8.00	Reflective	Concrete Block, painted	0.10	2	1.80
D	25839123	25.84	Diffusive	Perforated Panels, 100mm airspace (50%) Cork (50%)	0.80	2	26.87
E	36930116	36.93	Absorptive	Acoustical Blankets with Fabric covering 4"	0.85	2	62.79
F	4202638	4.20	Absorptive	Foam panel, 1"	0.40	2	3.23
G	6300689	6.30	Absorptive	Acoustical Blankets with Fabric covering 4"	0.85	2	10.71
H	15908231	15.91	Diffusive	Perforated Panels, 100mm airspace (50%) Cork (50%)	0.80	2	12.73
I	35047945	35.05	Absorptive	Acoustical Blankets with Fabric covering 4"	0.85	1	29.79
SEATS							
PERCENTAGE							
			70% Absorptive	Metal plastic seats, occupied	0.40	305	122
			30% Absorptive	Metal plastic seats, empty	0.20	130	26.00
NOTES:				TOTAL ABSORPTION			529.47
*Area per surface is constant through different levels on Entry into				TARGET ABSORPTION			529.16
*Specification of material is based on the pattern of Reflective > Diffusive > Absorptive finishes				DIFFERENCE			0.31
*Absorption obtained by multiplying Area in square meters (C3) with the NRC (C5) and Quantity (C7) PERCENT ERROR							0.059%



AUDITORIUM VOLUME AND CAPACITY

Total Volume = 2354.76 m³
Volume is obtained through Sketchup based on Entity Info
Total Number of Seats = 435 seats

COMPUTATION FOR OPTIMUM REVERBERATION TIME

$$\text{OptRT} = 0.30 \log V / 10$$

$$= 0.30 \log (2354.76 / 10)$$

$$= 0.711583995 \text{ or } 0.712 \text{ seconds}$$

COMPUTATION FOR TARGET TOTAL ABSORPTION

Base Formula

$$\text{RT} = 0.16V / A$$

Derive Total Absorption required

$$A = 0.16V / \text{RT}$$

$$= (0.16 \times 2354.76) / 0.712$$

$$= 529.1595508 \text{ or } 529.16 \text{ Sabins}$$

COMPUTATION FOR ACTUAL REVERBERATION TIME

$$\text{RT} = 0.16V / A$$

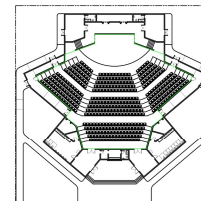
$$= (0.16 \times 2354.76) / 529.47$$

$$= 0.7115825259 \text{ or } 0.712 \text{ seconds}$$

$$0.711583995 \text{ (Optimum RT)} = 0.7115825259 \text{ (Actual RT)}$$

$$0.712 \text{ seconds (Optimum RT)} = 0.712 \text{ seconds (Actual RT)}$$

Accurate up to the 5th decimal place
Within the allowable +/- 0% of the Optimum RT



AREA OF STUDY

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