



PHASE II- L scale Plan

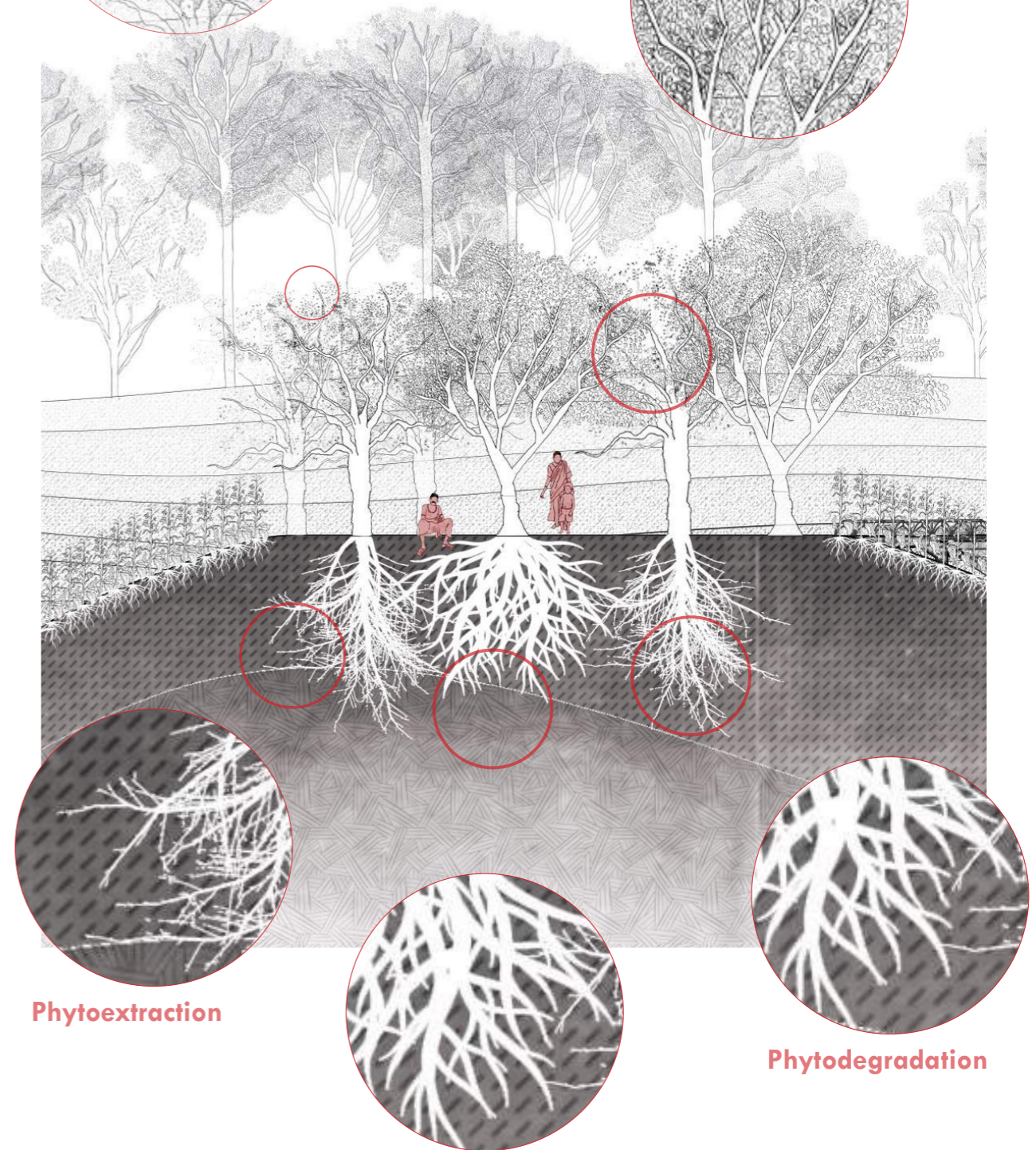
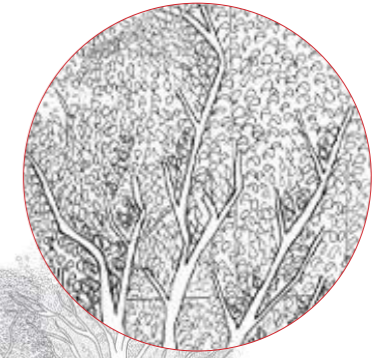
0 25 50 100M



Phytoextraction



Phytovolatilization



Phytoextraction



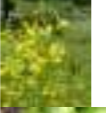






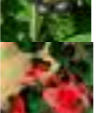
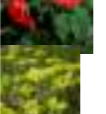





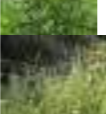






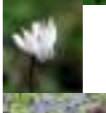




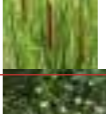



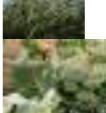





PhytoStabilisation

Phytodegradation

Section Depicting Phytoremediation Process

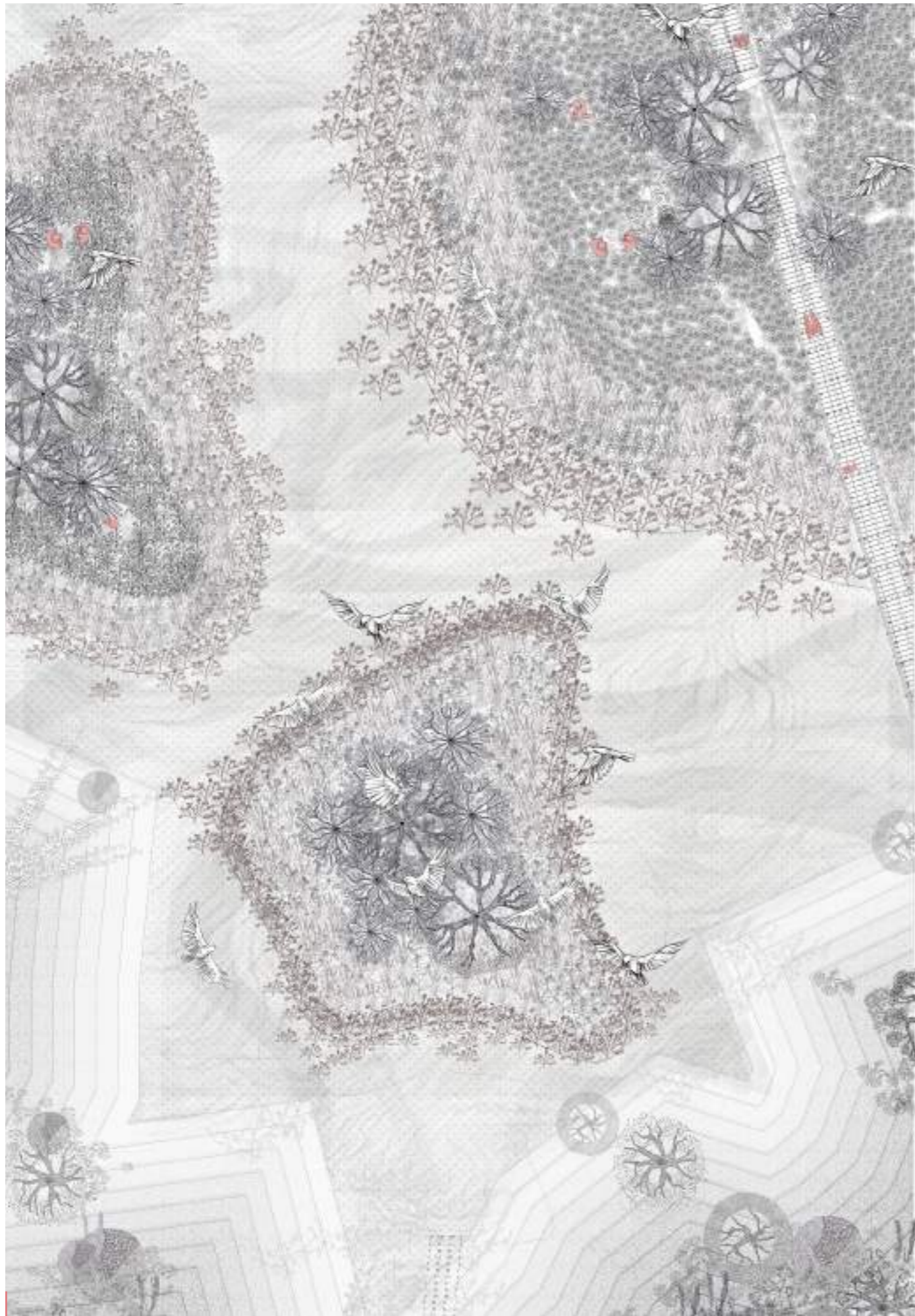
The entire structure is meticulously crafted to facilitate a phytoremediation-driven process. The section specifically illustrates the tailored phytoremediation techniques devised to establish and sustain the necessary remediation process for the ash pond.



No.	Scientific Names	Common Name	Family	Plant Form	Picture	PhytoProcess	Metal Extracted
1	<i>Sesbania drummondii</i>	Rattlebush	Fabaceae	Shrub		Phytoextraction	Lead
2	<i>Pteris vittata</i>	Chinese Brake ferns	Pteridaceae	Fern		Phytoextraction	Arsenic
3	<i>Brassica juncea</i>	Indian Mustard	Brassicaceae	Herb		Phytoextraction	Lead
4	<i>Lactuca sativa</i>	Lettuce	Asteraceae	Fern		Phytoextraction	Ni, Co, and Fe
5	<i>Lolium perenne</i>	Perennial rye grass	Graminaceae	Grass		Phytoextraction	Ni, Co, and Fe
6	<i>Mesembryanthemum criniflorum</i>	Vygies	Mesembryanthemum	Succulent herb		Phytoextraction	Lead
7	<i>Pelargonium hortorum</i>	Geranium	Geraniaceae	Succulent		Phytoextraction	Lead
8	<i>Nicotiana tabacum</i>	Tobacco	Solanaceae	herbaceous plant		Phytoextraction	Cadmium
9	<i>Zea mays</i>	Corn	Graminaceae	Grass		Phytoextraction	Pb, Ti, Cd, Pb
10	<i>Solanum nigrum</i>	Black Nightshade	Solanaceae	herbaceous plant		Phytoextraction	
11	<i>Pelargonium hortorum</i>	Garden Geranium	Geraniaceae	Succulent		Phytoextraction	Pb, Cd
12	<i>Sedum alfredii</i>	Sedum Alfredii Hance	Crassulaceae	Herb		Phytoextraction	Lead
13	<i>Xanthium strumarium</i>	Common Cocklebur	Asteraceae	Herb		Phytoextraction	Cd, Pb, Ni, Zn
14	<i>Thlaspi caerulescens</i>	Alpine pennycress	Brassicaceae	Herb		Phytoextraction	Cd, Zn
15	<i>Arabisidopsis helleri</i>	Mouse ear cress	Brassicaceae	Herb		Phytoextraction	Cd, Zn
16	<i>Commelina communis</i>	Commelina	Commelinaceae	herbaceous plant		Phytoextraction	Cu
17	<i>Eupatorium cannabinum</i>	Holy rope/ hemp-agrimony	Asteraceae	Herb		Phytostabilization	Arsenic
18	<i>Kosteletzkya pentacarpos</i>	Coastal Mallow/ Seashore Mallow	Malvaceae	Herb		Phytostabilization	Cd, Zn, Cd
19	<i>Salix</i> sps.	Willow	Salicaceae	Creeper		Phytostabilization	
20	<i>Helianthus annuus</i>	Sunflower	Asteraceae	Herb		Phytostabilization	Cu, Zn, Pb, Hg, As, Cd, Ni
21	<i>Vigna unguiculata</i>	Cowpea	Fabaceae	herbaceous plant		Phytostabilization	Pb, Zn
22	<i>Azolla caroliniana</i>	Carolina mosquito fern/ Water Velvet	Salvinaceae	Fern		Rhizofiltration	Arsenic
23	<i>Eichhornia crassipes</i>	Water hyacinth	Pontederaceae	Herb		Rhizofiltration	Fe, Cr, Cu, Cd, Zn, Ni, As
24	<i>Callitriche lusitanica</i>	Water starwort	Callitricheaceae	Shrub		Rhizofiltration	Arsenic
25	<i>Callitriche stagnalis</i>	Pond-water starwort	Plantaginaceae	Herb		Rhizofiltration	Uranium
26	<i>Fontinalis antipyretica</i>	Water moss	Fontinalaceae	herbaceous plant		Rhizofiltration	Uranium
27	<i>Lemna minor</i>	Duckweed	Araceae	Herb		Rhizofiltration	Uranium
28	<i>Callitriche brutia</i>	Water starwort	Callitriche	Herb		Rhizofiltration	Arsenic
29	<i>Typha angustifolia</i>	Cattail	Typhaceae	Herb		Rhizofiltration	Cu, Pb, Ni, Fe, Mn, and Zn
30	<i>Ranunculus trichophyllus</i>	Threadleaf crowfoot	Ranunculaceae	Herb		Rhizofiltration	Arsenic
31	<i>Polygonum speltiensis</i>	Rabbitfoot grass	Polygonon	Grass		Phytovolatilization	Arsenic
32	<i>Juncus effusus</i>	Common rush	Juncaceae	herbaceous plant		Phytovolatilization	Ammonium
33	<i>Phragmites australis</i>	Perennial reed grass	Poaceae	Grass		Phytovolatilization	Chlorines
34	<i>Brassica oleracea</i> var. <i>italica</i>	Broccoli	Brassicaceae	Shrub		Phytovolatilization	Selenium
35	<i>Brassica juncea</i>	Mustard	Brassicaceae	Herb		Phytovolatilization	Selenium
36	<i>Populus trichocarpa</i> x <i>Populus deltoides</i> , designated 1 Hybrid poplar tree		Salicaceae	Tree		Phytovolatilization	trichloroethylene (TCE) and tetrachloroethylene (PCE)
37	<i>Scirpus robustus</i>	Saltmarsh bulrush	Cyperaceae	Herb		Phytovolatilization	Selenium
38	<i>Myriophyllum brasiliense</i>	Parrot's feather	Haloragaceae	Herb		Phytovolatilization	Selenium

40	<i>Typha latifolia</i>	Broad leaf cattail	Typhaceae	herbaceous plant		Phytovolatilization	Selenium	59	<i>Festuca rubra</i>	Red fescue	Gramineae	Creper		Phytostabilization	As, B, Mn, Zn
41	<i>Puccinellia nuttalliana</i>	Alkali grass	Gramineae	Grass		Phytodesalination	Na <sup>+</sup> , Cl <sup>-</sup>	60	<i>saccharum munja</i>	Sarkanda	Gramineae	Herb		Phytostabilization	As, B, Mn, Zn
42	<i>Sesuvium portulacastrum</i>	Sea purslane	Alzoaceae	Creper		Phytodesalination	Na <sup>+</sup>	61	<i>ricinus communis</i>	castor oil plant	Spurge	Shrub		Phytostabilization	Cu, Cd, Ni, Pb, Zn
43	<i>Ipomoea aquatica</i>	Water spinach	Convolvulaceae	Creper		Phytodesalination	Na <sup>+</sup>	62	<i>ipomea carnea</i>	Bush morning glory	Convolvulaceae	Shrub		Phytostabilization	Cu, Cr, Ni, Pb
44	<i>Alternanthera philoxeroides</i>	Alligator weed	Amaranthaceae	Herb		Phytodesalination	Na <sup>+</sup>	63	<i>Thelypteris dentata</i>	Downy maiden fern	Thelypteridaceae	Herb		Phytostabilization	As, Cd, Fe, Pb, Si
45	<i>Ludwigia adscendens</i>	Water primrose	Onagraceae	Creper		Phytodesalination	Na <sup>+</sup>	64	<i>sida cardifolia</i>	Flannal weed	Malvaceae	Herb		Phytostabilization/Phytoextraction	Co, Ni, Pb
46	<i>Lonicera japonica</i> Thunb	Honeysuckle	Caprifoliaceae	Climbing Shrub		Phytodesalination	Na <sup>+</sup>	65	<i>cynodan dactylon</i>	Bermuda grass	Gramineae	Herb		Phytostabilization	Cd, Cu, Fe, Mn, Ni, Pb
47	<i>Astragalus</i> sp.	Membranous mild-vetch	Fabaceae	herbaceous plant		Phytoremediation	Arsenic	66	<i>chenopodium album</i>	Wild spinach	Amaranthaceae	Herb		Phytostabilization/Phytoextraction	Cd, Cr, Mn
48	<i>Arabidopsis thaliana</i>	Thale cress	Brassicaceae	herbaceous plant		Phytoremediation	Pb, Cu	67	<i>conciya monensis</i>	Marx Cabbage	Moncassin	Herb		Phytoextraction	Zn
49	<i>Sorghastrum nutans</i>	Indian grass	Poaceae	Grass		Phytoremediation	Chlorines and ethanes	68	<i>polygonum aviculare</i>	common knotgrass	Polygonaceae	Herb		Phytoextraction	Ag, Au, Zn
50	<i>Phragmites australis</i>	Common reed	Poaceae	Grass		Phytofiltration	Uranium	69	<i>ditrichia viscosa</i>	Yellow fleabean	Asteraceae	Herb		Phytoextraction	As, Zn
51	<i>Suaeda maritima</i>	herbaceous seepweed	Amaranthaceae	Herb		Phytodesalination	Na <sup>+</sup> , Cl <sup>-</sup>	70	<i>cistus ladanifer</i>	gum rockrose	Cistaceae	Shrub		Phytostabilization	Al, Ag, Ba, Si, Sr, Sb
52	<i>Eragrostis</i>	Lovegrass	acamptoclados	Grass		Phytostabilization	Arsenic	71	<i>holcus lanatus</i>	yorkshire fog	Poaceae	Grass		Phytostabilization	As, Hg
53	<i>Gladiolus</i>	Sword lilly	Gladiolaceae	herbaceous plant		Phytostabilization	Arsenic	72	<i>epilobium dodonaei</i>	Marsh willowherb	Onagraceae	herbaceous plant		Phytostabilization	Cu, Pb, Zn
54	<i>Alyssum</i>	Sweet Allison	Brassicaceae	Herb		Phytostabilization	Arsenic	73	<i>helichrysum</i>	italian strawflower	Asteraceae	Shrub		Phytostabilization	Cu, Pb, Zn
55	<i>Astragalus bisulcatus</i>	Two-grooved milkveck	Fabaceae	Shrub		Phytovolatilization	Hg, Se and As	74	<i>acacia retinodes</i>	silver wattle	Fabaceae	Shrub		Phytostabilization	As, Cd, Cu, Pb, Zn





Planting grain- S scale

0 5 10 25mt

PLANTING PALATTE



**Water Moss**  
*Fontinalis antipyretica*  
Rhizofilterization



**Rabbitfootgrass**  
*Polypogonmon speliensis*  
Phytovolatilization



**Rapeseed**  
*Brassica napus*  
Phytovolatilization



**Common Cocklebur**  
*Xanthium strumarium*  
Phytoextraction



**Mustard Seeds**  
*Brassica juncea*  
Phytoextraction



**Sunflower**  
*Helianthus annuus*  
Phytostabilization



**Tulip Tree**  
*Liriodendron tulipifera*  
Phytovolatilization



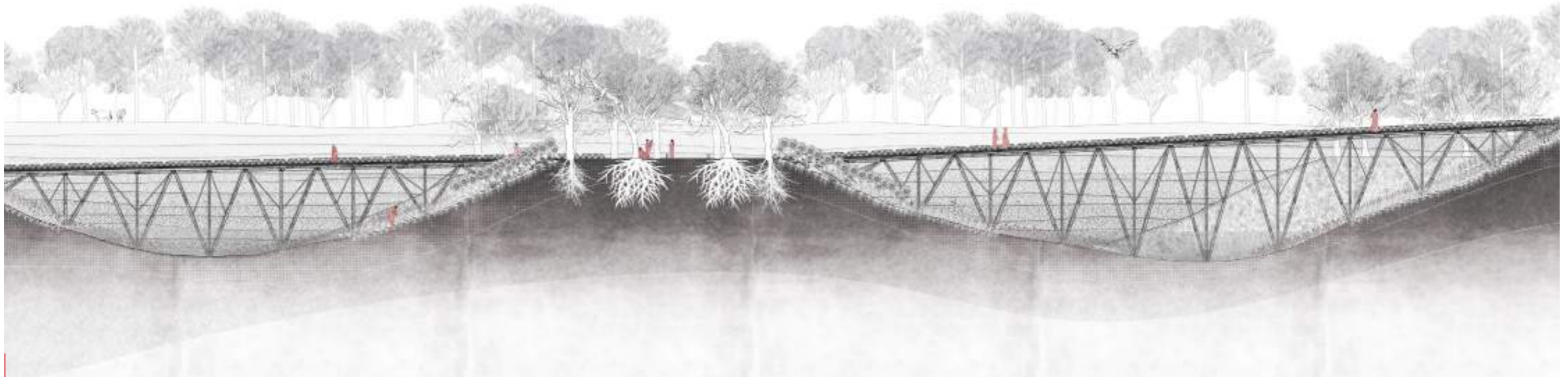
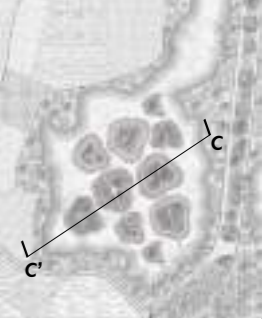
**Popalar Tree**  
*Populus trichocarpa*  
Phytovolatilization





Section CC'

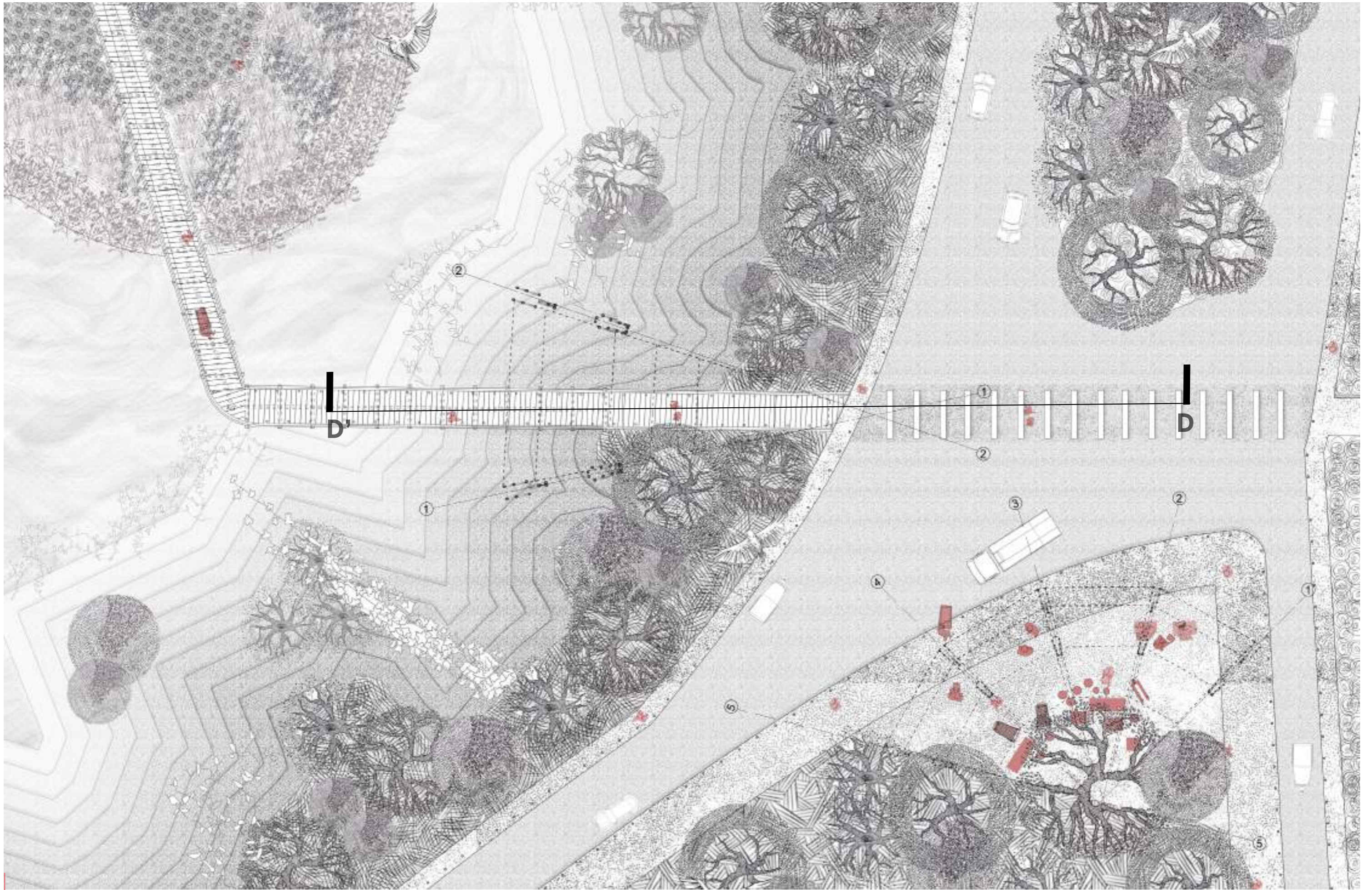
0 5 10 25mt



SECTION ILLUSTRATING THE PATHWAY BRIDGE CONNECTIONS BETWEEN THE PROPOSED MOUNDS

0 5 10 25mt

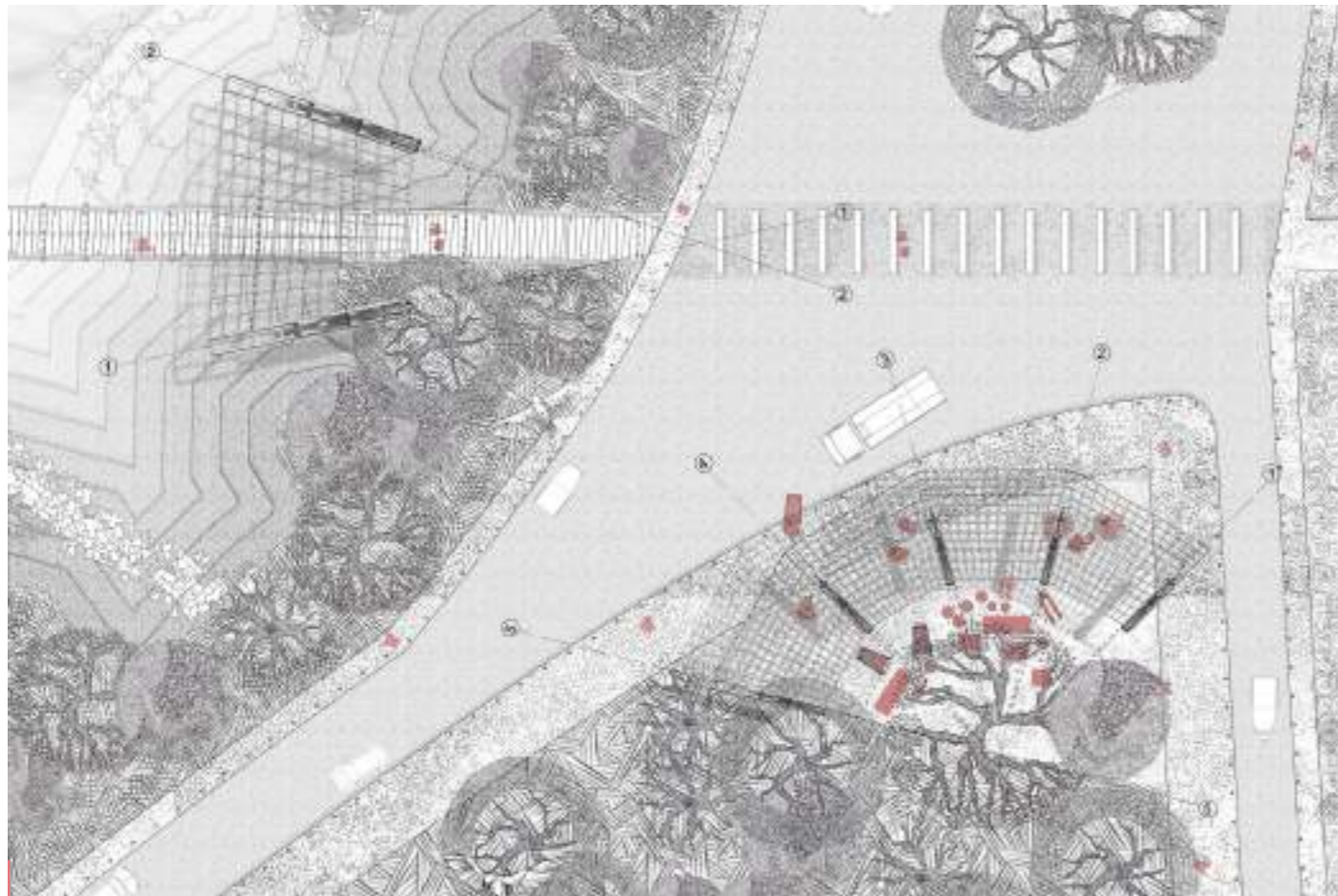




M-Scale: Entrance and Nursery Pavillion Plan at Lvl +2mts- Activity Portrayal

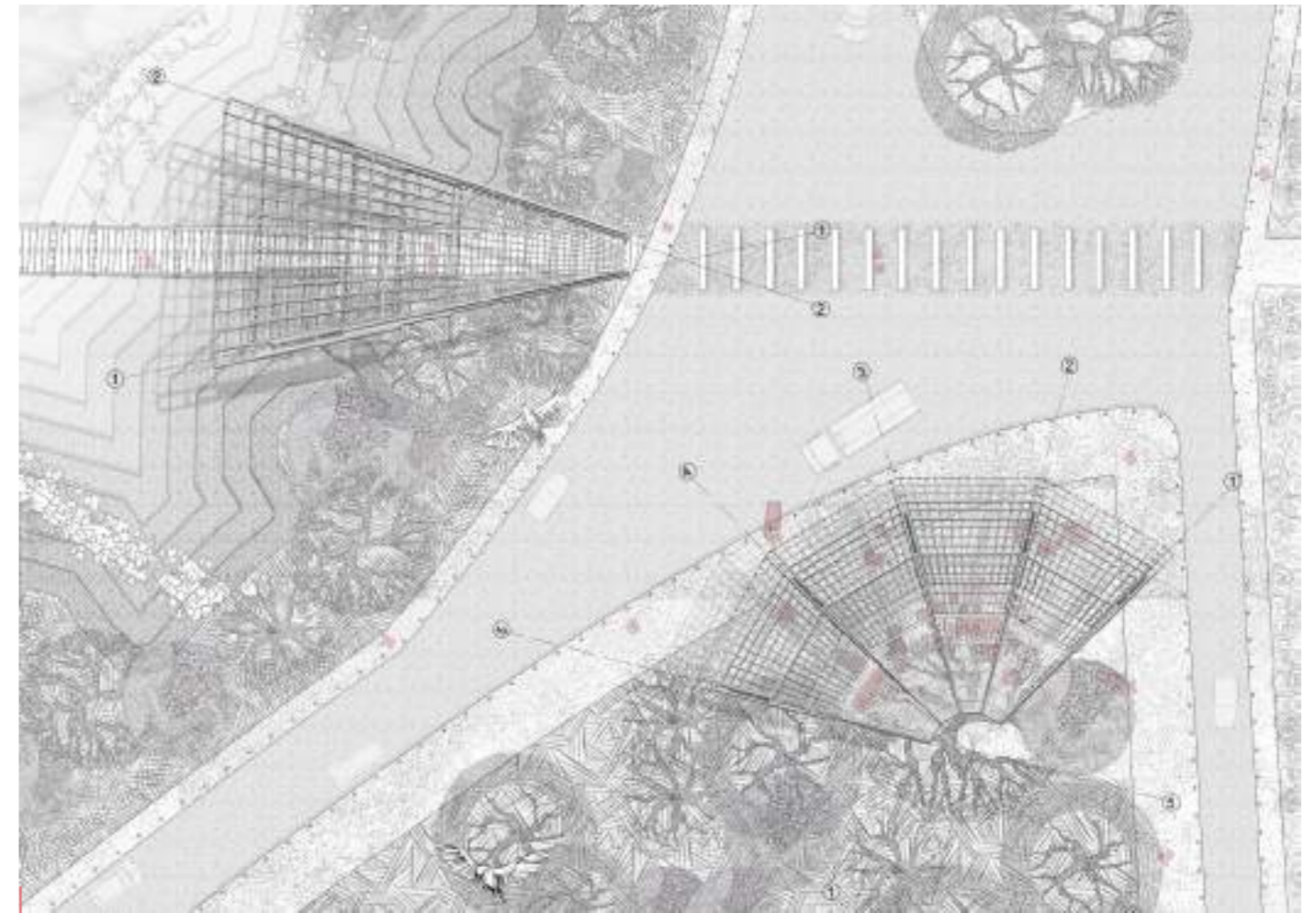
0 5 10 25mt





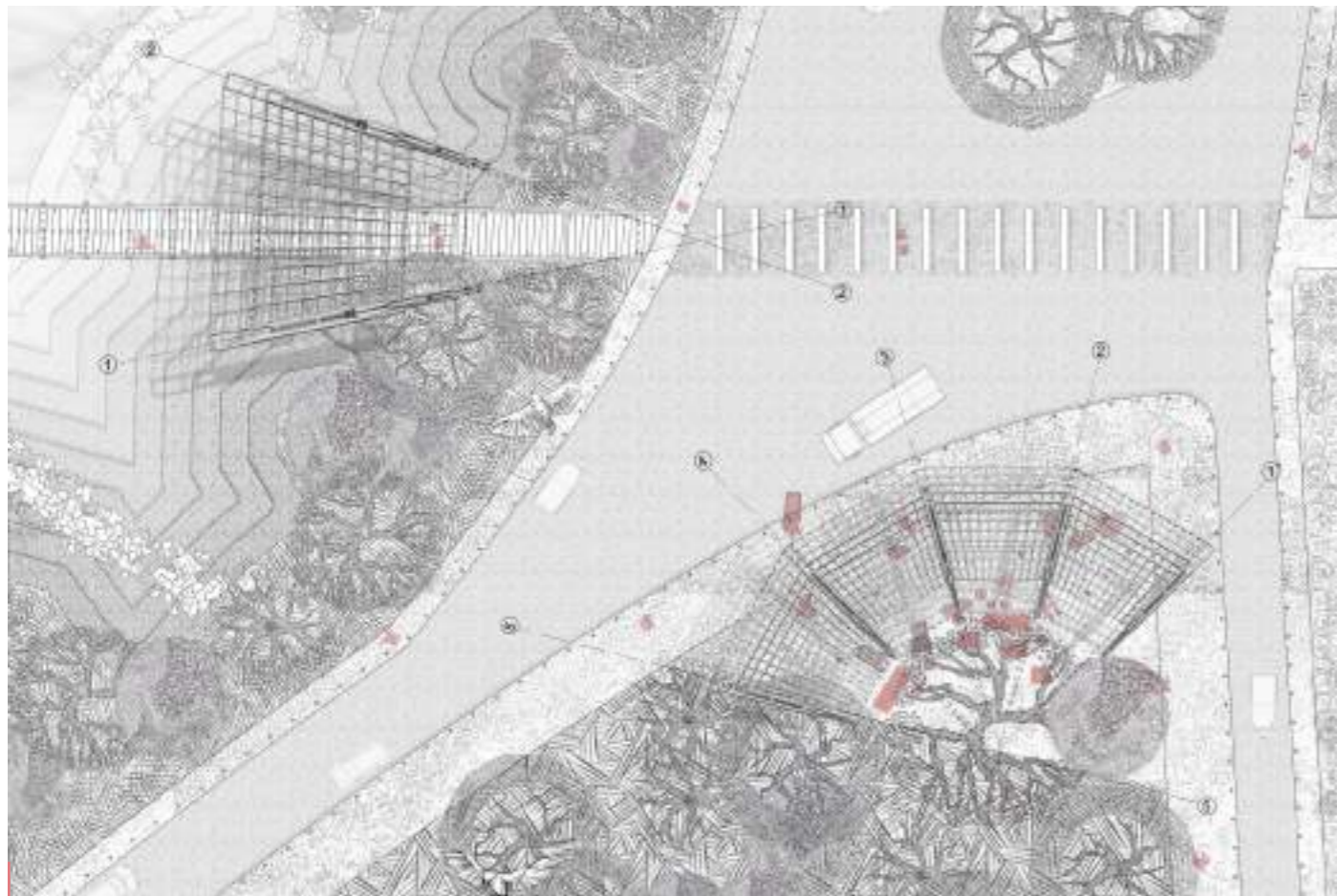
Entrance Pavillion & Nursery pavillion: S-Scale Plan At Lvl +4mt

0 5 10 25mt



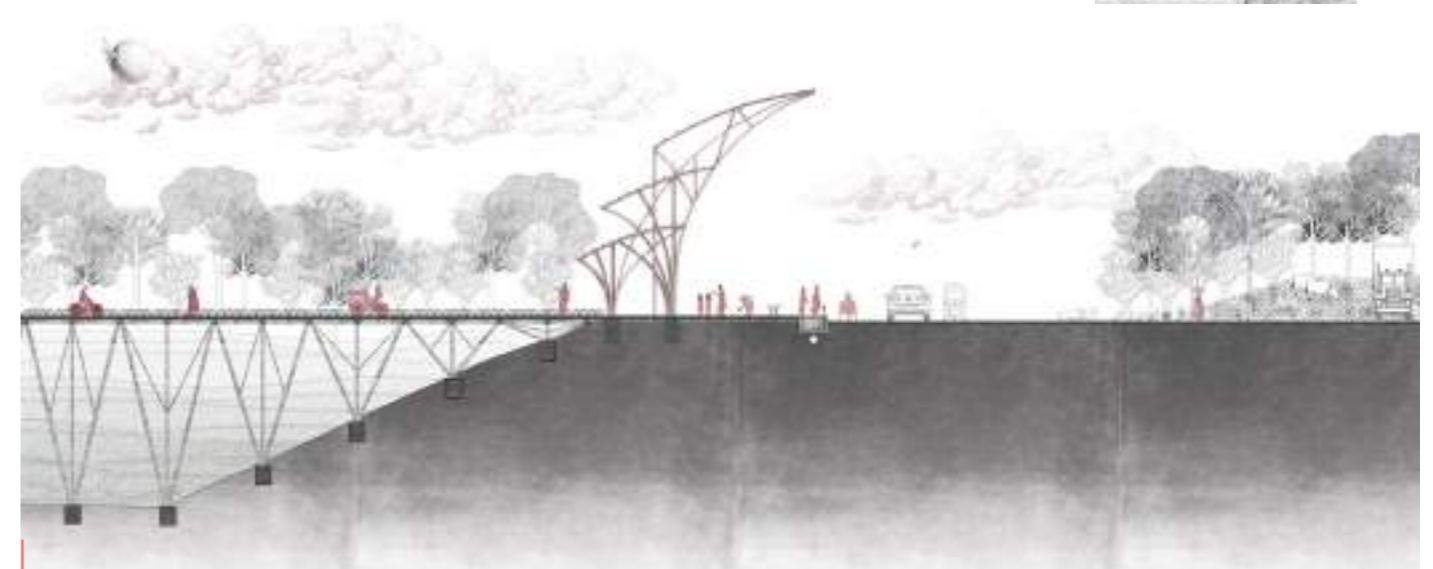
Entrance Pavillion & Nursery pavillion: Roof Plan

0 5 10 25mt



Entrance Pavillion & Nursery pavillion: S-Scale Plan At Lvl +10mt

0 5 10 25mt



Section DD'

0 5 10 25mt



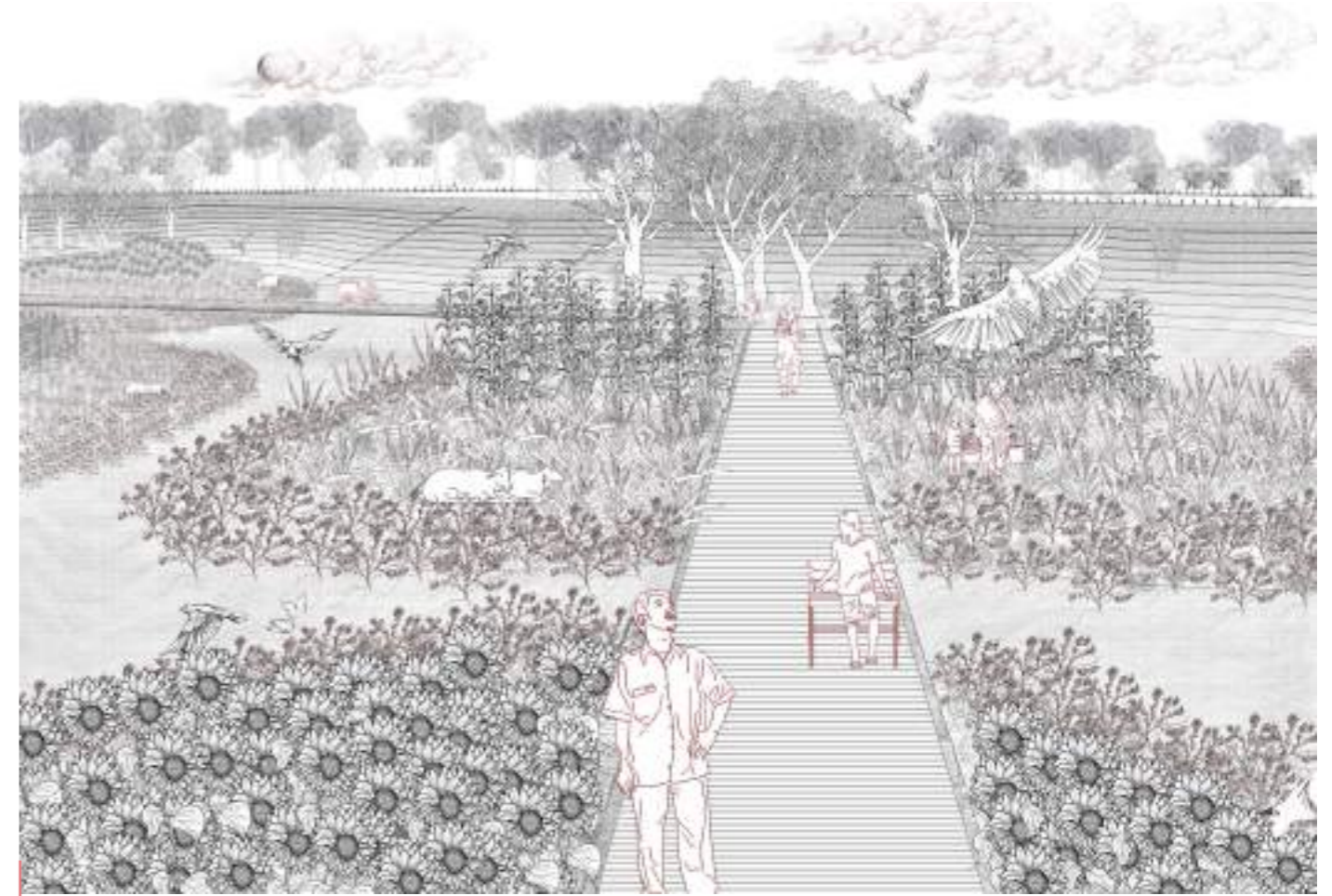
SPECULATIVE VIEW OF THE ASH POND DURING REMEDIATION PHASE.



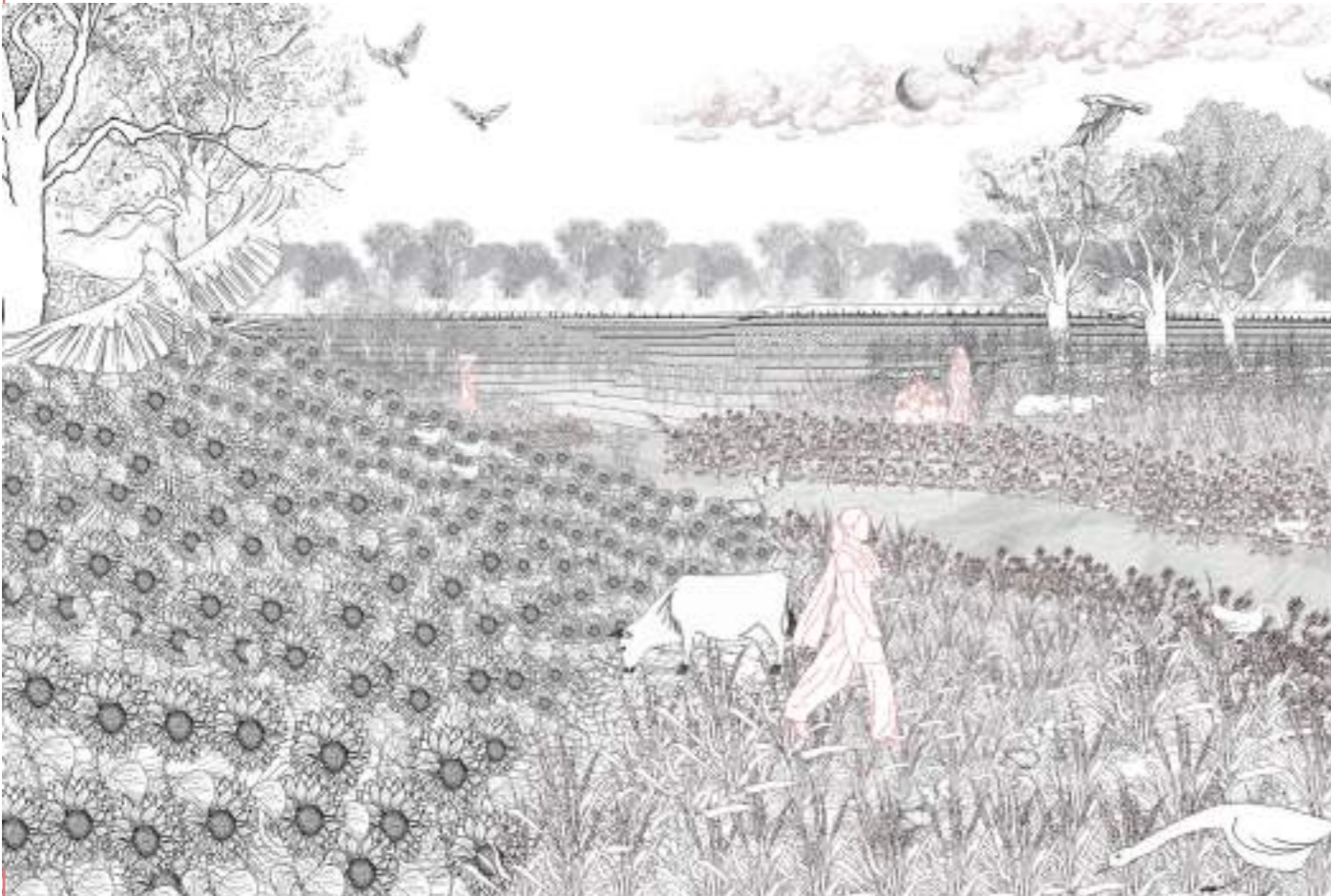




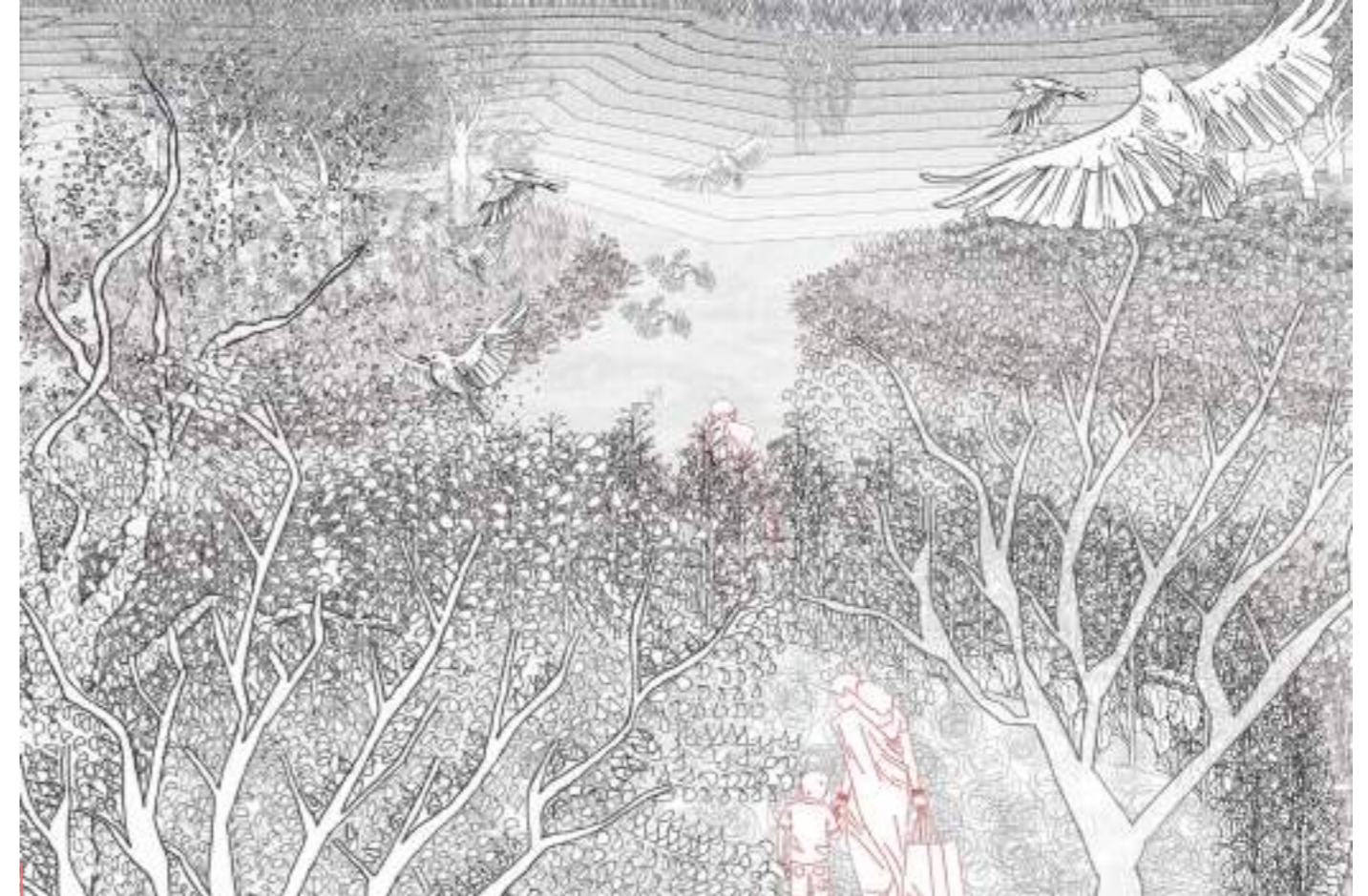
View portraying the post-remediation phase-5 to 10years/ aging



View showcasing the pathway experiences and tranquilities between the mounds



View illustrating the various experience between the mounds through human activities



Speculative view from the top of the designed mound space.