

# THE SEEDS WE SOW

LAND ART GENERATOR: RENEWABLE ENERGY CAN BE BEAUTIFUL

MANNHEIM HAS A HISTORY OF INNOVATION, INGENUITY, AND A DIVERSITY OF THE ARTS, PUSHING THE PROGRESS OF LEARNING AND CULTIVATING A FUTURE WITH A HIGHER QUALITY OF LIFE FOR ALL. THIS SUSTAINABLE LAND ART ENCAPSULATES THESE QUANTITATIVE AND QUALITATIVE QUALITIES STARTING WITH THE VERY SEEDS FOUND IN THIS TOWN. FROM THE SEED A SIMPLE SHAPE IS DERIVED WHICH WILL BE THE FUNDAMENTAL BUILDING BLOCK OF THE FRACTALS. THIS SHAPE IS TAILORED SPECIFICALLY TO ALLOW FOR A DIVERSITY OF SUSTAINABLE TECHNIQUES WHILE NOT IMPEDING ON THE AIR FLOW THROUGHOUT THE SITE. THE IDEA OF FRACTALS DIRECTLY LEADS TO THE IMPLEMENTATION OF SCALABLE STRUCTURES. FROM THE PERSONAL GARDEN TO THE CIVIC CENTER THESE FRACTALS EMBODY THE SYMBIOSIS OF MECHANICAL INNOVATION AND BIOLOGICAL BEAUTY. THE FRACTALS RISE AND FALL THROUGHOUT THE PARK, CREATING DIFFERENT SPACE AND EXPERIENCES ABOVE AND BELOW. THEY PROVIDE A RANGE OF VANTAGE POINTS AT VARIOUS HEIGHTS TO OBSERVE THE PARK AND SURROUNDING LANDSCAPE, AND EVEN CITY BEYOND. CONVERSELY THE UNDER SIDES CREATE INTRIGUING SPACES OF SHELTER AND MYSTERY. FROM DWELLING NOOKS TO GREAT GATEWAYS, THE FRACTALS GROW FROM THE GROUND PROVIDING A LANDSCAPE IN MOTION, TO BE WALKED AND WONDERED THROUGH, MAKING THIS PARK AN INSPIRATIONAL GATEWAY TO THE GREEN CORRIDOR.

FRACTAL ONE IS "GARDEN", THE SMALLEST OF THE FRACTALS WHICH STARTS AT THE HUMAN SCALE. THIS PROVIDES A MODULAR CURVED BENCH AND GARDEN TO BE INCORPORATED IN ANY INDIVIDUAL'S BACKYARD OR USED AS A PUBLIC RESTING STOP. A PHOTOVOLTAIC CANOPY CAPTURES THE SOLAR RAYS AND CONVERTS IT INTO ELECTRICITY FOR THE INDIVIDUAL TO USE, WHILE ALSO PROVIDING SHADING WHILE RESTING ON THE FRACTAL. FRACTAL TWO IS "PLAY" AND IS A SCALE THE KIDS CAN USE THE STRUCTURE AS A CLIMBING PLAYGROUND, TURNING THEIR PHYSICAL ACTIONS INTO ELECTRICITY. STEPPINGSTONES AND LEVER POWER GENERATORS CAPTURE THE ENERGY OF KIDS PLAYING, ADDING TO THE POWER OF THE SITE IN A MORE SUBTLE AND PLAYFUL WAY. FRACTAL THREE IS "HARVEST" AND AT THIS SCALE THERE IS ENOUGH SPACE TO CREATE LARGE AREAS OF COMMUNITY GARDENS AND BIOMASS LEFTOVERS FOR FUEL PRODUCTION. HAVING A HOME GARDEN IS NICE, BUT ON THE TOP OF THIS FRACTAL YOU CAN GROW MORE LABOR-INTENSIVE VEGETABLES THAT REQUIRE MORE SPACE, AND BELOW THE CAPTURED WATER TRICKLES DOWN TO VINE-BASED PLANTS. FRACTAL FOUR IS "HABITAT" WHERE WE CAN CREATE LARGER AREAS FOR HABITAT RESTORATION FOR THE LOCAL FAUNA AND FLORA. WHERE ONE CAN WALK ALONGSIDE THE NATIONAL AND LOCAL FLOWERS AND THE VERY PLANT SEEDS THE FRACTALS ARE DERIVED FROM. FRACTAL FIVE IS "LEARN" A SIZE THAT WE CAN INHABIT THE FRACTAL SHAPE ITSELF IN ITS FULL BUILDING FORM. AT THE CENTER OF THE PARK, THIS FRACTAL CREATES THE LEARNING CENTER FOR CLASSES, DEMONSTRATIONS, FOOD MARKETS, AND EXHIBITS TO TAKE PLACE. HERE VISITORS CAN LEARN ABOUT ALL THE VARIOUS TECHNIQUES USED IN THE PARK IN CREATING A SUSTAINABLE AND POWER PRODUCING SITE. SCALED MODELS AND MOCKUPS CAN SHOW WHICH FEATURES CAN BE EASILY SEEN AND THE OTHERS WORKING BEHIND THE SCENES, AS WELL AS HOW MUCH POWER EACH PRODUCES. THIS LAND ART DRAWS ITS FORM FROM THE SEEDS OF GERMANY AND GROWS INTO AN INTERACTIVE AND IMMERSIVE EXPERIENCE AT VARIOUS SCALES WHILE INCORPORATING A COMBINATION OF DIFFERENT AND INNOVATIVE SUSTAINABLE FEATURES.



## SITE

ALONG WITH THE TYPICAL SITE ASSESSMENT METRICS TO CONSIDER, A FEW UNIQUE ONES TO THIS SITE INCLUDE THE TWO LONG GREEN CORRIDOR EXTENSIONS INTO THE LOCAL NEIGHBORHOODS AND THE WIND PATHWAY FLOWING THROUGH THE SITE IS TO PREDOMINATELY UNOBSTRUCTED. OTHER ASSETS ALREADY ON SITE THAT COULD BE OF POTENTIAL USE INCLUDE THE POND, EXISTING BIKE PATH, AND THE U-HALL BUILDING.

### SITE FEATURES

- 1-GREEN CORRIDORS
- 2-OPEN SPACE FOR AIR FLOW
- 3-POND
- 4-BIKE PATH
- 5-U-HALL BUILDING
- 6-MULTIPLE NEIGHBORHOOD ACCESS POINTS

## FRACTALS

FRACTALS ARE NATURALLY OCCURRING PATTERNS IN NATURE WHEN A GEOMETRIC SHAPE CAN BE SPLIT INTO PARTS, EACH OF WHICH IS A REDUCED SIZE COPY OF THE WHOLE. FROM SNOWFLAKES TO THE HUMAN FORM, THE FRACTAL FIBONACCI SEQUENCE HAS BEEN TRANSLATED INTO ARCHITECTURE THROUGHOUT HISTORY.

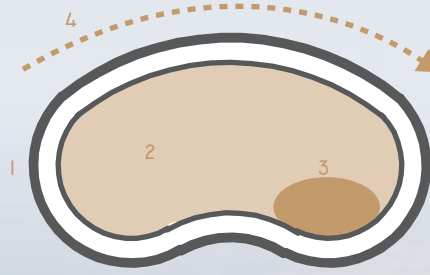


## THE SEED

FRACTALS IN NATURE ARE DEVELOPED OVER MILLIONS OF YEARS, FORMING FROM THE FUNDAMENTALS OF ITS RESPECTIVE ENVIRONMENT. THE FRACTAL FOR THIS DESIGN IS DERIVED FROM THE LOCAL FLORA, THE INDIGENOUS FLOWERS AND WHEATS THAT ARE COMMON AND PRIZED BY GERMANY. EXTRACTING THE SEED'S BASIC STRUCTURE AND PARTS, A BASIC FRACTAL SHAPE IS DEVELOPED, WHICH CAN SERVE MULTIPLE FUNCTIONS AT VARIOUS SCALES.

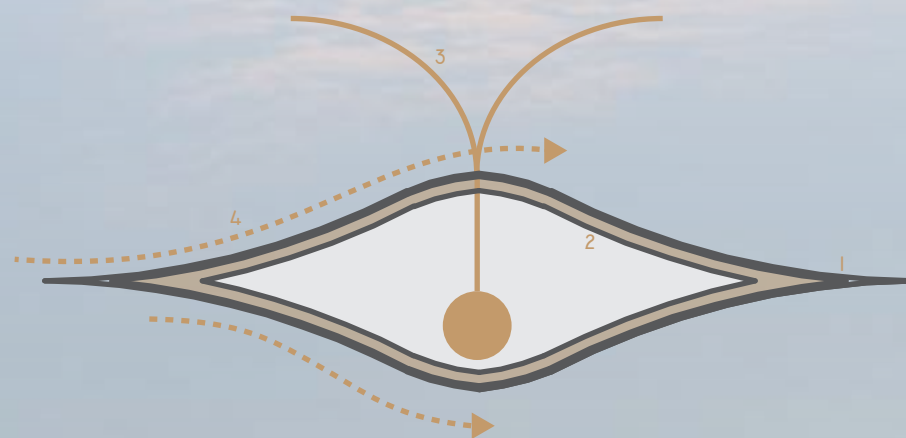
### PARTS OF THE SEED

- 1-TESTA: COAT/OUTER LAYER
- 2-ENDOSPERM: STORES RESERVE FOOD/NOURISHMENT
- 3-EMBRYO: YOUNG PLANT/LEAVES,STEM,ROOTS
- 4-FORM: BASED ON TYPE/FUNCTION/ENVIRONMENT



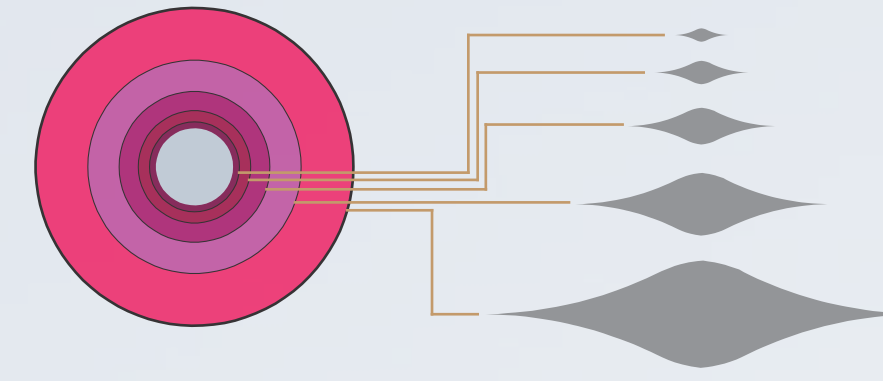
### PARTS OF THE FRACTAL

- 1-TESTA: GLULAM STRUCTURE & WOOD FINISH
- 2-ENDOSPERM: SOIL FOR GARDEN/COMMUNITY HARVEST/HABITAT
- 3-EMBRYO: MECHANICAL SUSTAINABILITY FEATURE/WATER CATCHMENT/PV PANELS
- 4-FORM: ALLOW MAX AIR FLOW THROUGH SITE



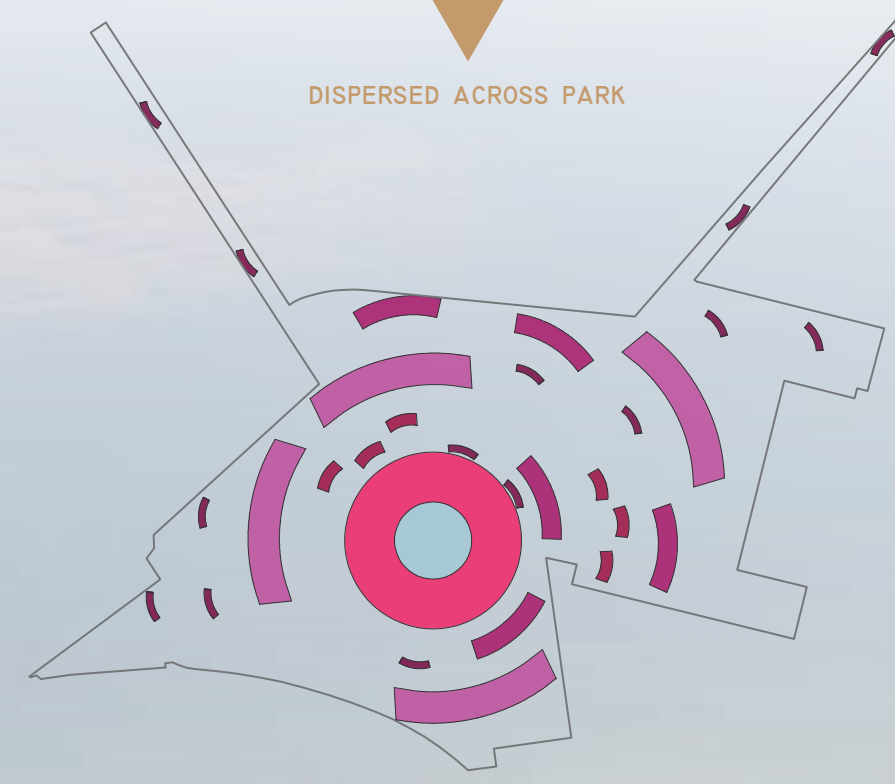
## SCALE

LOOKING TO CREATE AN INTERACTIVE, ARTISTIC FORM THAT CAN BE SCALED FROM THE PERSONAL GARDEN TO THE CIVIC PARK, A FRACTAL FORM DERIVED FROM THE LOCAL SEEDS CREATES A NATURAL GROWING STRUCTURE DEPICTED AT FIVE DIFFERENT SIZES. EACH FRACTAL IS SCALED 1.66 TIMES LARGER THAN THE LAST, AND EACH ONE CATER TO ITS OWN UNIQUE SUSTAINABLE FEATURES IN ORDINANCE TO ITS RELATIONSHIP OF THE HUMAN FORM. THE FRACTAL FIRST RADIATES OUT FROM THE CENTER, BUT THEN ARE SPECIFICALLY DISPLACED THROUGHOUT THE SITE TO BETTER SERVE EACH OF THEIR FUNCTIONS. GARDEN, PLAY, HARVEST, HABITAT, AND LEARN EACH LEAD YOU FROM YOUR HOME TO THROUGHOUT THE PARK IN VARIOUS PATHS, EXPERIENCES, AND SCALES.



NATURAL RADIAL GROWTH

DISPERSED ACROSS PARK



## PLAN

PATHWAYS EXTENDING FROM THE LEARNING FRACTAL OUT TO THE NEIGHBORHOODS CREATE A NETWORK OF WALKING AND BIKE PATHS, CIRCULATING VISITORS THROUGHOUT THE SITE TO VARIOUS DESTINATIONS AND EXPERIENCES. THE EXISTING U-HALL WILL BE PARTIALLY TORN DOWN AND PARTIALLY REUSED TO STORE THE SUPPLIES AND EXCESS FOOD FROM THE HARVEST FRACTAL. THE POND WILL REMAIN AS A NATURAL ASSET AND FEATURE IN THE PARK. THE LARGE HABITAT FRACTALS CREATE GATEWAYS FROM THE MAJOR DIRECTIONS AND COLLECTOR PATHWAYS WHICH VISITORS WILL BE ENTERING FROM. THE PLAY FRACTAL IS GROUPED IN TWO AREAS TO ENCOURAGE GATHERING OF PEOPLE AND ENCOURAGING ACTIVITY. THE GARDEN FRACTALS ARE DISPERSED AROUND THE ENTIRE PARK TO CREATE MOMENTS OF REST AND PAUSE TO RELAX AND ENJOY THE SURROUNDING NATURE.

### SITE PLAN FEATURES

- 1-FRACTAL ONE: GARDEN
- 2-FRACTAL TWO: PLAY
- 3-FRACTAL THREE: HARVEST
- 4-FRACTAL FOUR: HABITAT
- 5-FRACTAL FIVE: LEARN
- 6-POND REMAINS
- 7-COMMUNITY GATEWAYS
- 8-FOOD STORAGE
- 9-WALKING BIKING NETWORK
- 10-NEIGHBORHOOD PATH

