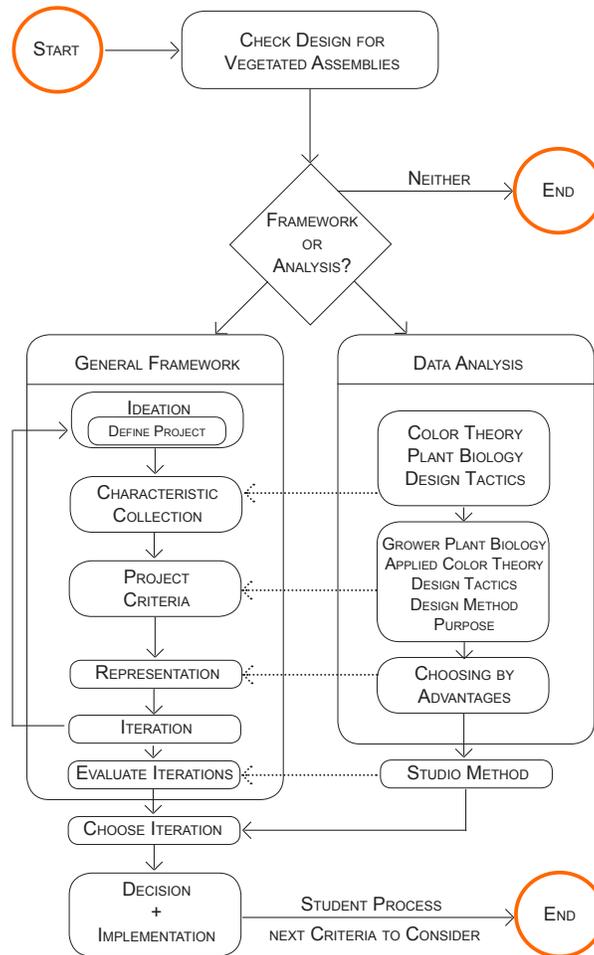


A FRAME OF MIND

FRAMEWORK FOR VEGETATED ASSEMBLIES



DEVELOPED WITH:

THE CENTER FOR HIGH PERFORMANCE ENVIRONMENTS

VT LIVINGWALL DESIGNER

START

END

END

END

A FRAME OF MIND

FRAMEWORK FOR VEGETATED ASSEMBLIES

START

REASONING BEHIND THE FRAMEWORK

The idea for this framework came out of the results of a class I took a few years ago.

This general professional practice course had a group project component that asked us to make a firm based on a specialized idea for presentation to people who were both in design and not in design. Our group, as many of the groups had difficulty conveying our ideas to others, let alone finding a unique idea to center our work around.

This then combined with a part of a class that was communicating science. While I am not in a strictly science field, the concept of being able to communicate our ideas that we come up with is important. Could I visually represent my cognitive process to others?

From this experience, I wanted to ease the transition between learning, teaching, and doing. This next story lies on the more positive side. I once was in a meeting with an advisor a few years later and talked to him about this experience and he mentioned being a node for information exchange rather than a repository. As I hope to become a professor, it is important to be an expert, but not be so narrow that you cannot point students in the right direction. "But what happens if the professor is not around to help the student, maybe it is after-hours?" We thought about it and realized that providing a visual representation of your thought processes would be helpful as a decision support system. This became the idea for the framework and for a method to combine ideas in design teams.

It is the reciprocal nature of being able to expose designers to how to integrate ideas with other experts outside of their fields and to expose others to the unique learning and working environment that is studio that makes the book intriguing. That often textbooks or references are difficult to sometimes see why information or techniques are useful in "my future" and are sometimes not even read.

I wanted to write the framework to share an experience and how our experiences can and could be translated for others and that thought processes can be conveyed visually and working with other experts can be rewarding. It is a framework that you can plug your ideas into and then argument into your own.

This is the resulting framework to help you combine ideas or to design specifically with vegetated assemblies and color theory if you choose not to augment it.

A FRAME OF MIND

START

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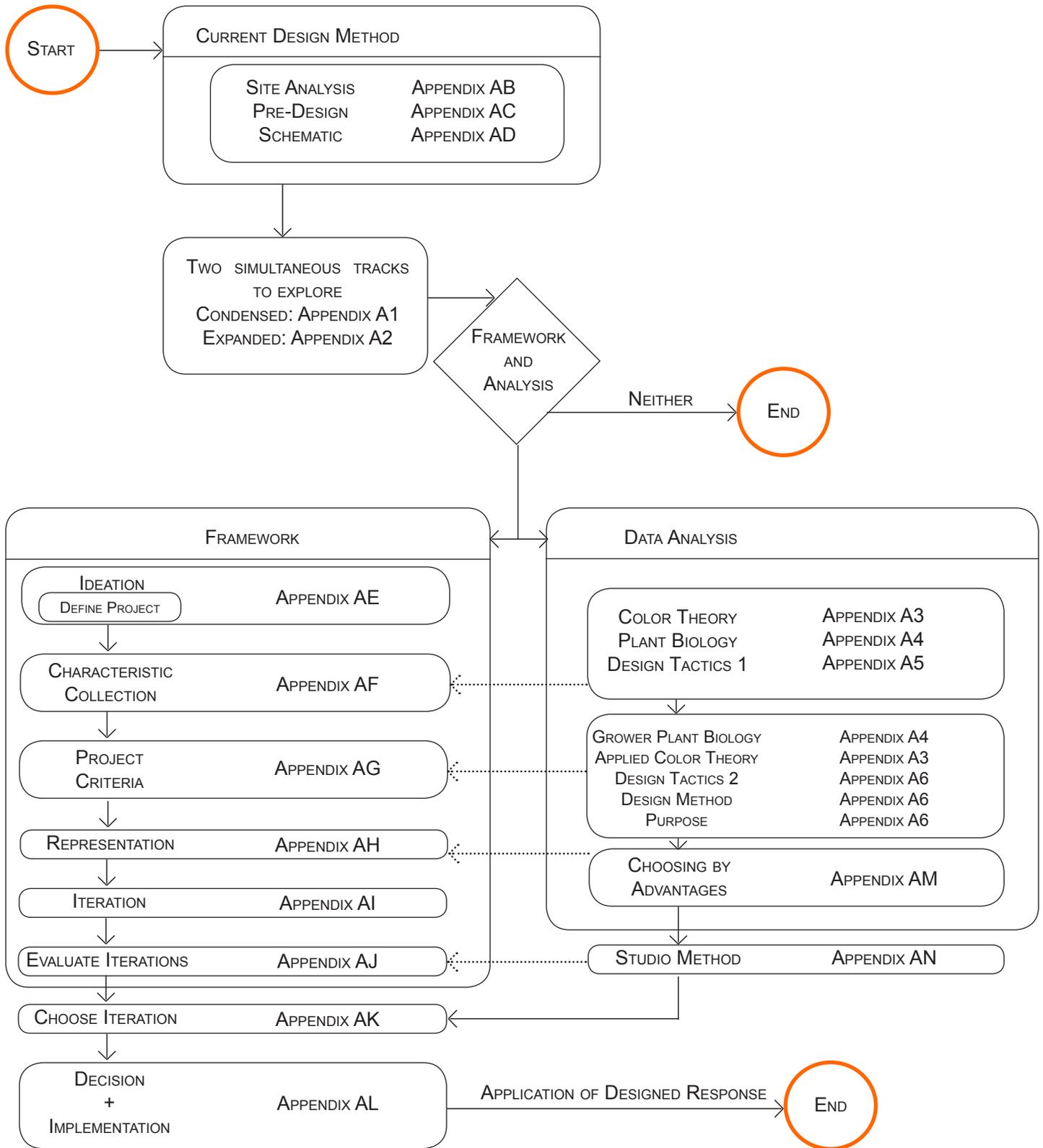
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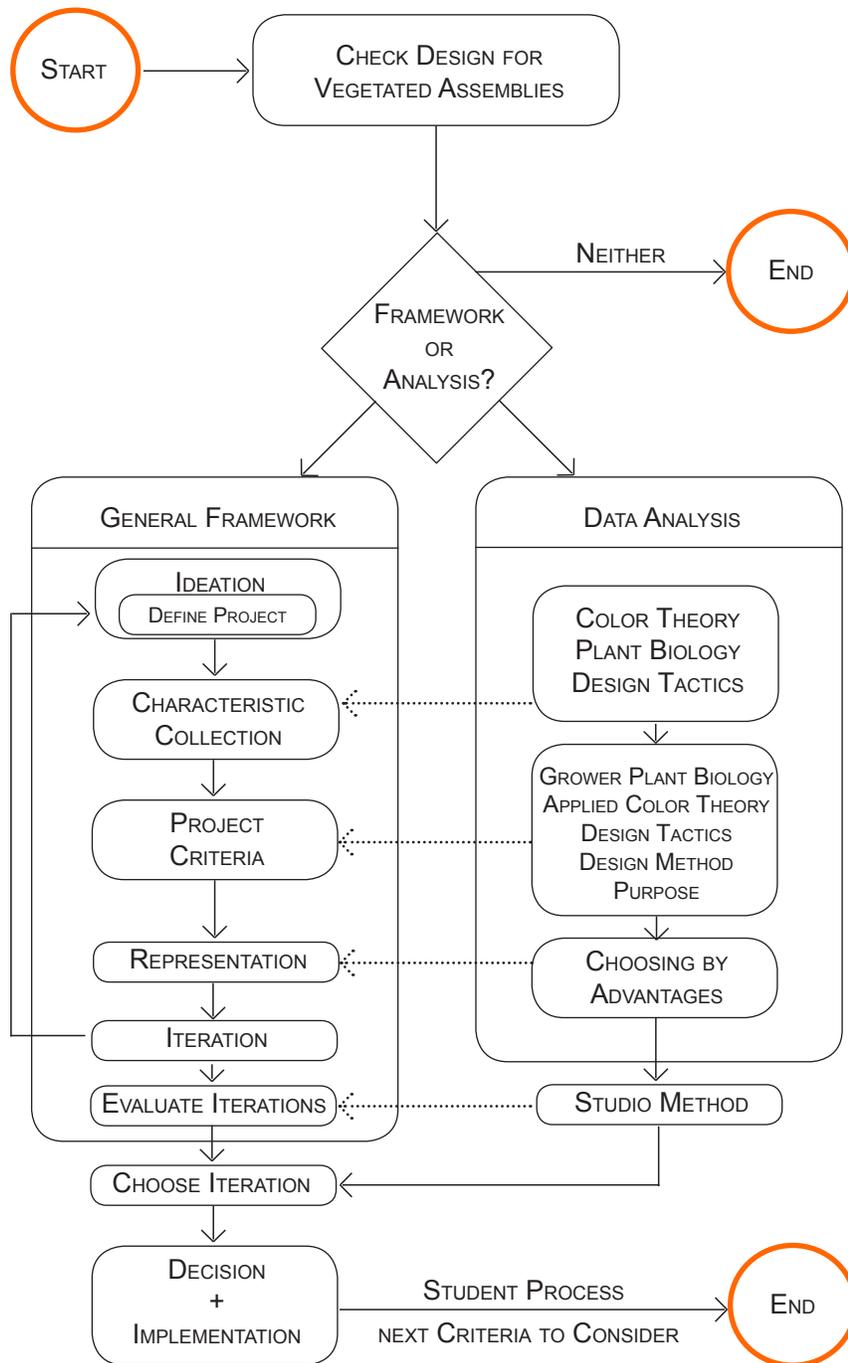
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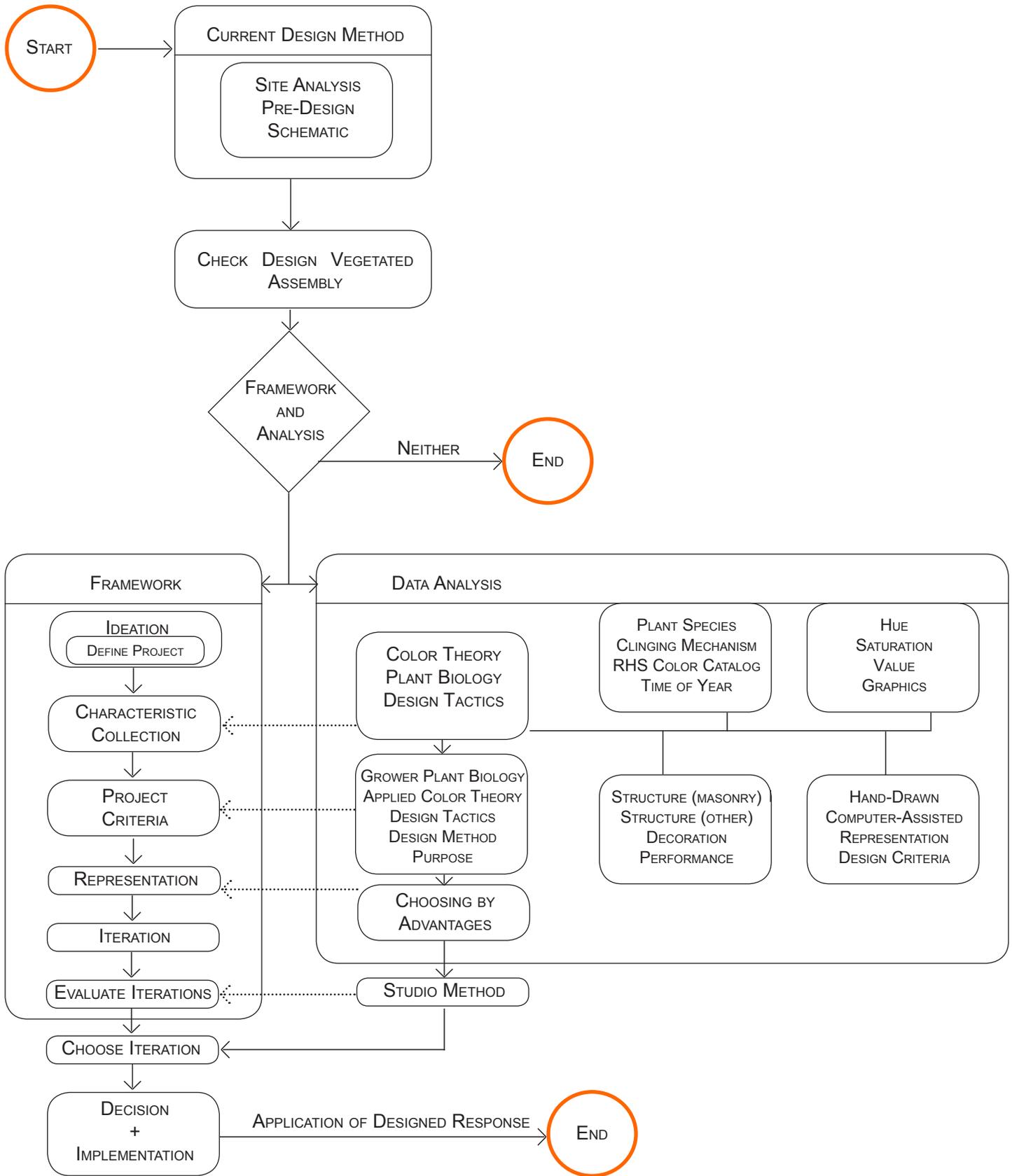
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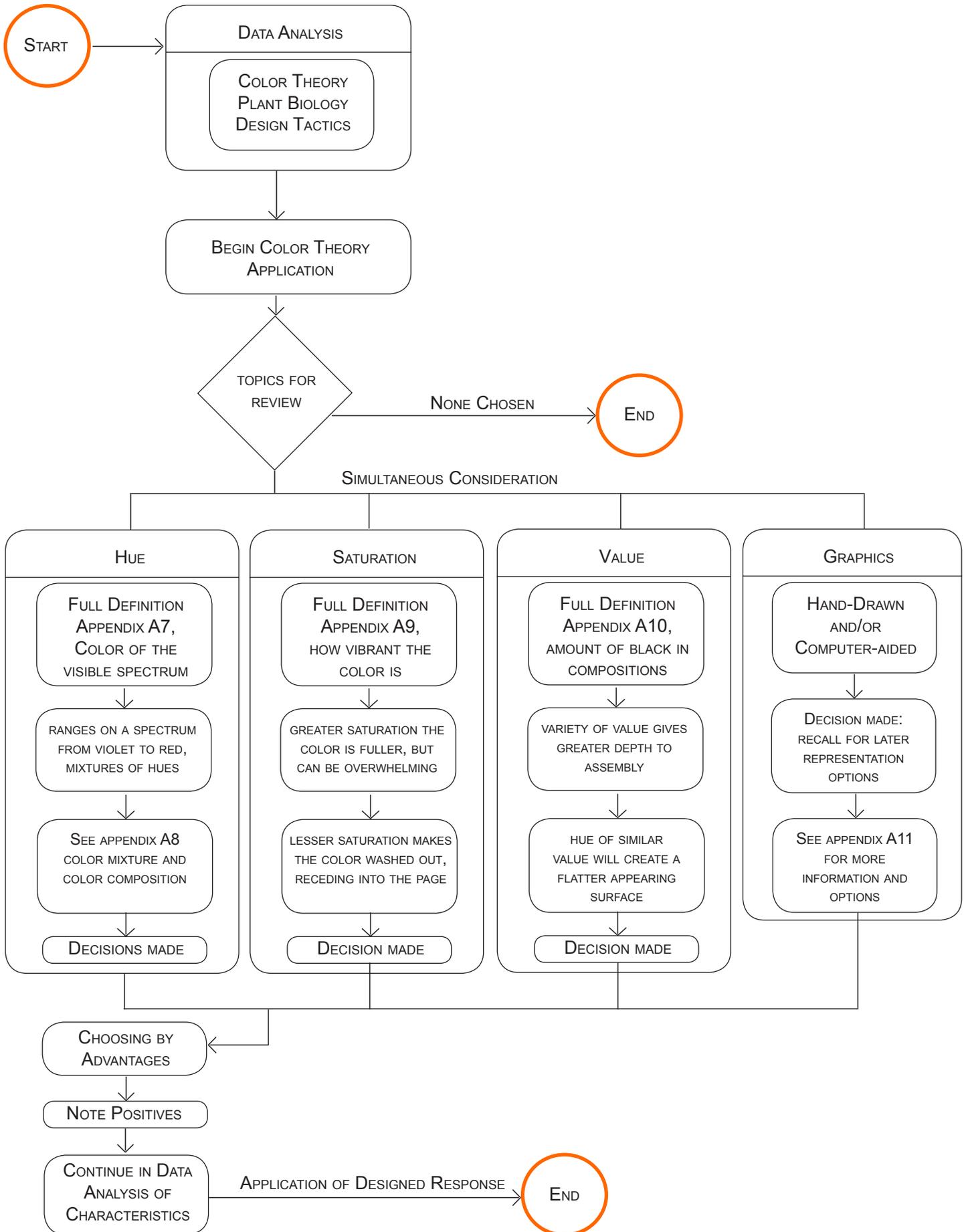
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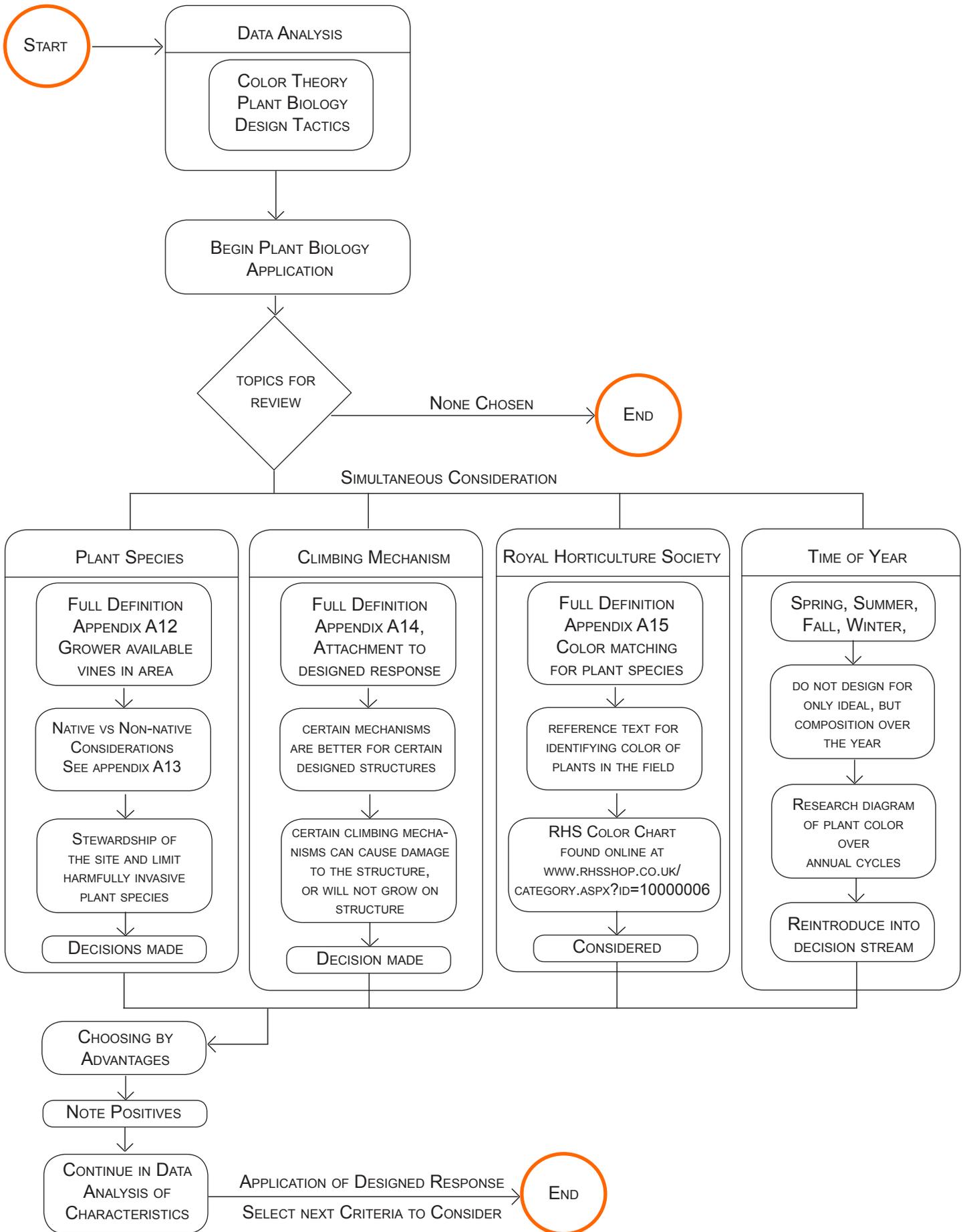
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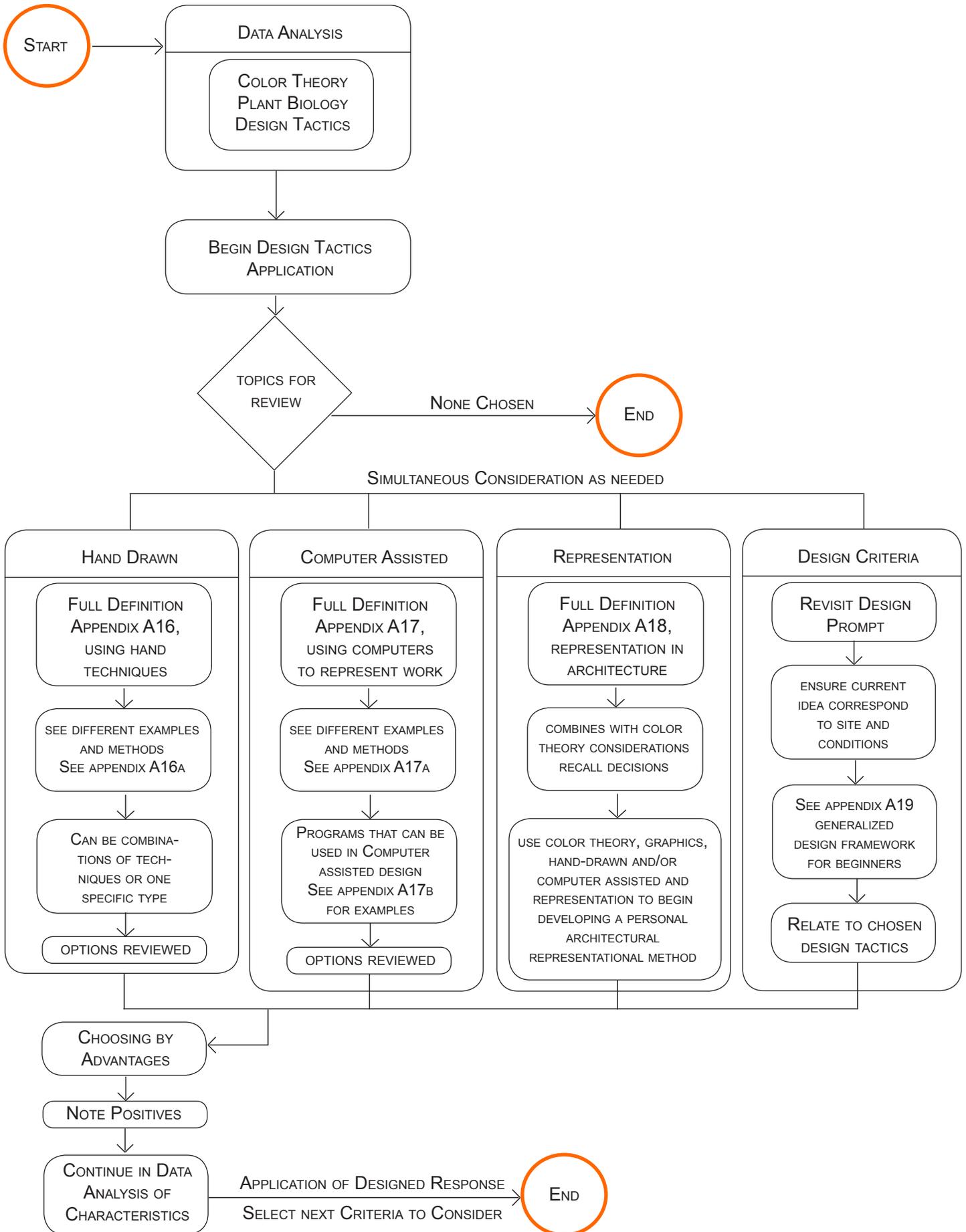


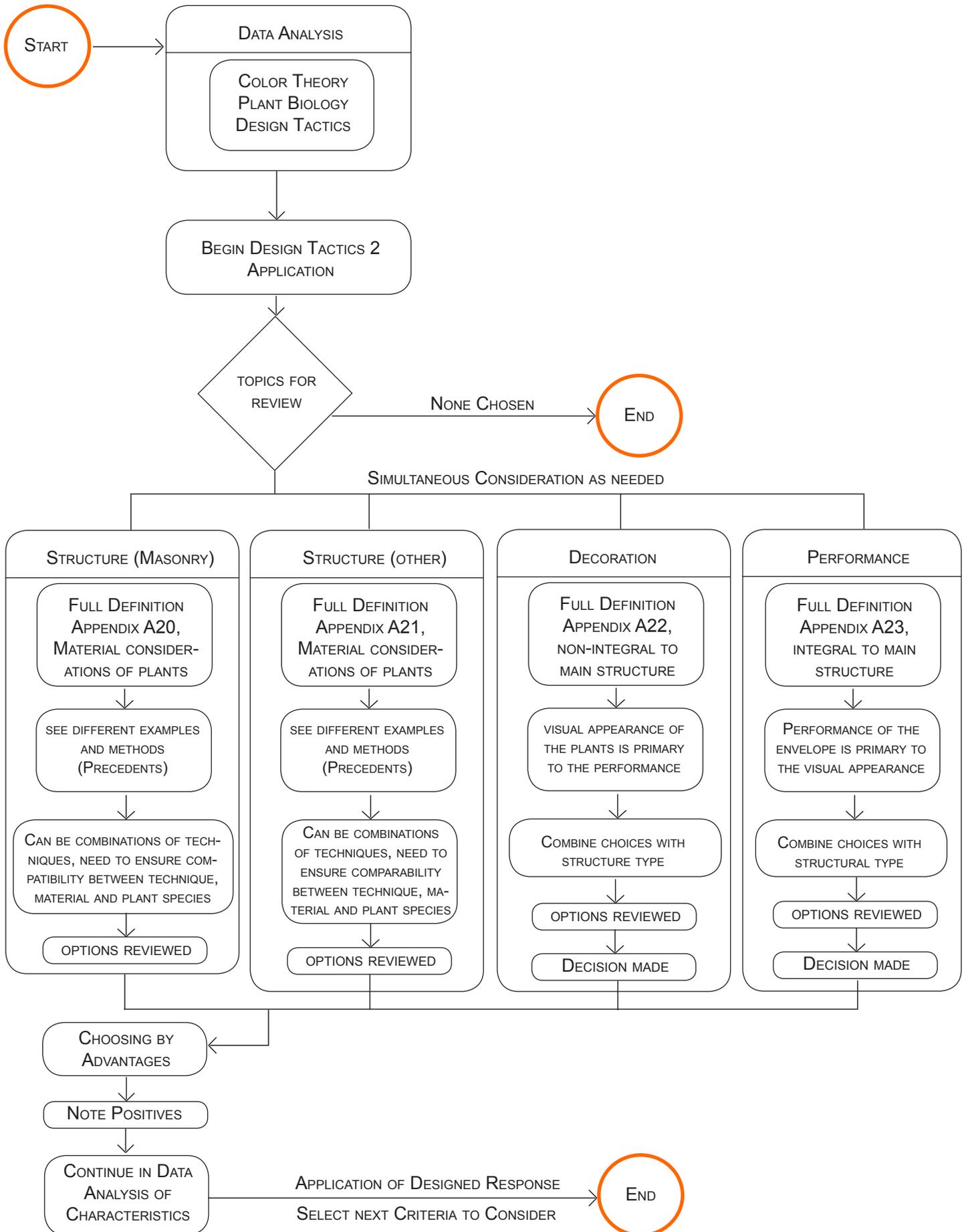


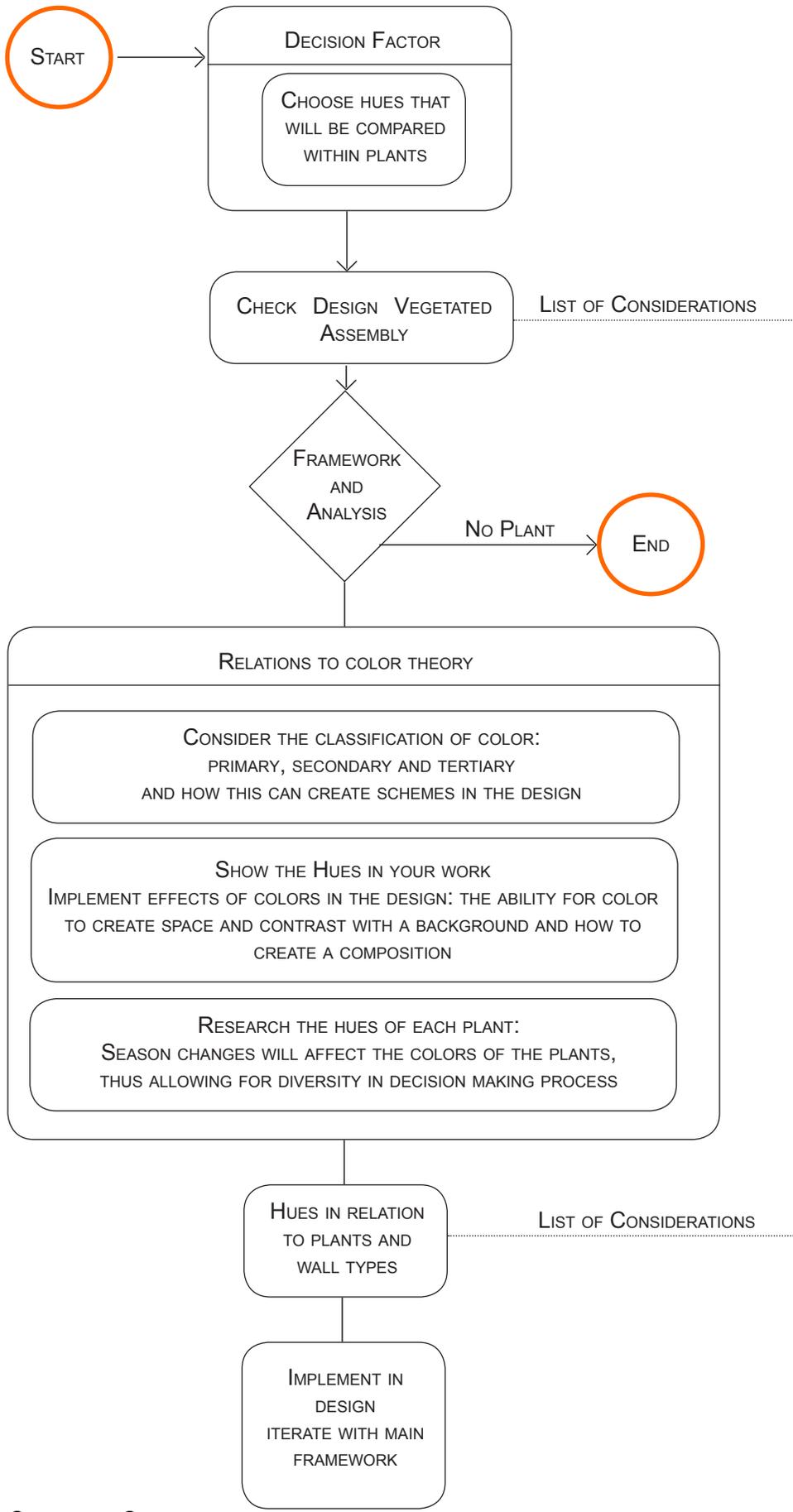












HUE SELECTION CRITERIA

HUE OF A COLOR IS HOW YOU, AS THE DESIGNER SEE IT. PEOPLE WILL IDENTIFY COLOR SLIGHTLY DIFFERENTLY, BUT THE MAIN HUE WILL OFTEN BE THE SAME.

LAWS OF NATURE, SUCH AS LIGHT AND COLOR WILL ALWAYS EXIST, BUT AN ORGAN SUCH AS THE EYE MUST BE PRESENT TO MANIFEST THE PHYSICAL CONDITION.

THE EYE DOES NOT CAUSE LIGHT AND COLOR TO OCCUR, BUT ALLOWS IT TO APPEAR TO US.

IT IS VITALLY IMPORTANT NOT TO REDUCE VISION, COLOR, OR REPRESENTATION TO SIMPLY A PICTURE.

THEREFORE, WHEN CONSTRUCTING AND DESIGNING VEGETATED ASSEMBLIES, IT IS NOT ONLY IMPORTANT TO CONSIDER THE EDGE AS A DESIGN INTERVENTION, BUT ALSO FROM THE EYE'S NEED TO DIFFERENTIATE SPACE.

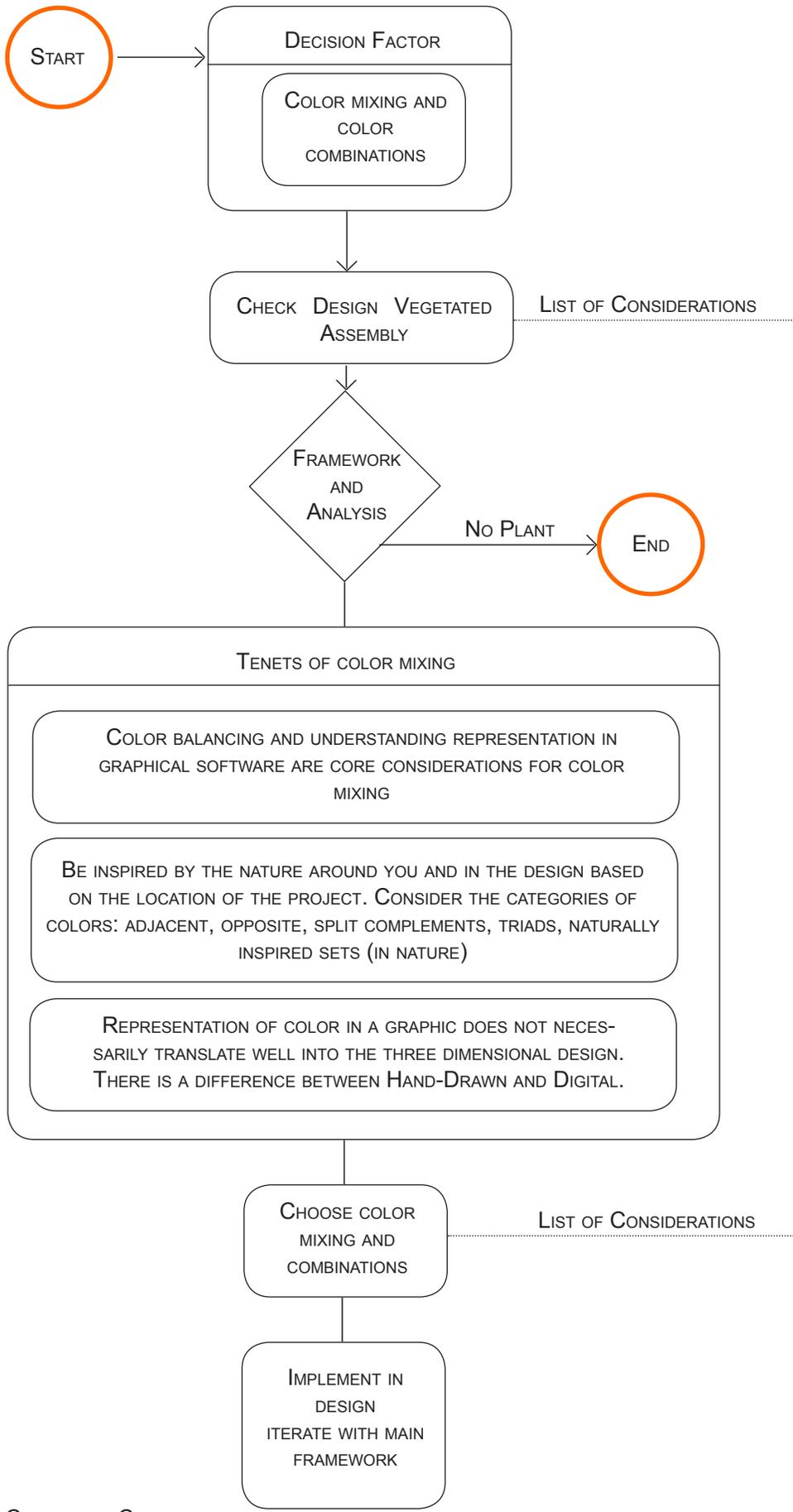
THE EDGE OF THE ASSEMBLY NOT ONLY CAN DEFINE THE SPACE, BUT ALSO THE CHARACTER OF THE INTERNAL FIELD OF VEGETATION AND ITS COLOR.

SPECIES OF THE PLANT WILL DETERMINE THE HUES THAT ARE AVAILABLE.

THIS CAN ALSO CHANGE DURING THE YEAR DEPENDING ON FRUIT, LEAVES, FLOWERS.

THUS, OUR PLANTS (PIGMENTS), OUR ASSEMBLY (MEDIUM), OUR SPACE (PAPER), AND OUR DESIGN (METHODS) MUST BE IN RELATION TO EACH OTHER AND THOUGHT OF IN A COHESIVE WHOLE.

CONSIDER REVIEWING:
ALBERS, GOETHE, LUIS BARRAGAN, AND NEWTON



COLOR COMBINATION CRITERIA

THERE SHOULD BE A DYNAMIC VIEW OF THE SPACE, NOT A STATIC VIEW IN OUR MINDS. WE CAN MIX COLOR THROUGH LIGHT OR PIGMENT

THE SPACE THAT WE DESIGN CHANGES OVER THE YEARS, WITH THE SEASONS, THE WEATHER, THE NUMBER OF PEOPLE PRESENT, THE LIGHTING CONDITIONS, THE FORM OF THE SPACE ITSELF, AND MUCH MORE.

WHEN SIMULATING A SPACE, THE PRODUCTION OF THE REPRESENTATION AND COLOR BALANCING PLAY A CRITICAL ROLE IN THE FINAL RESULT. YOU SIMPLY CANNOT MIX PLANTS BY COLOR THE SAME WAY A PRINTER MAKES COLORS.

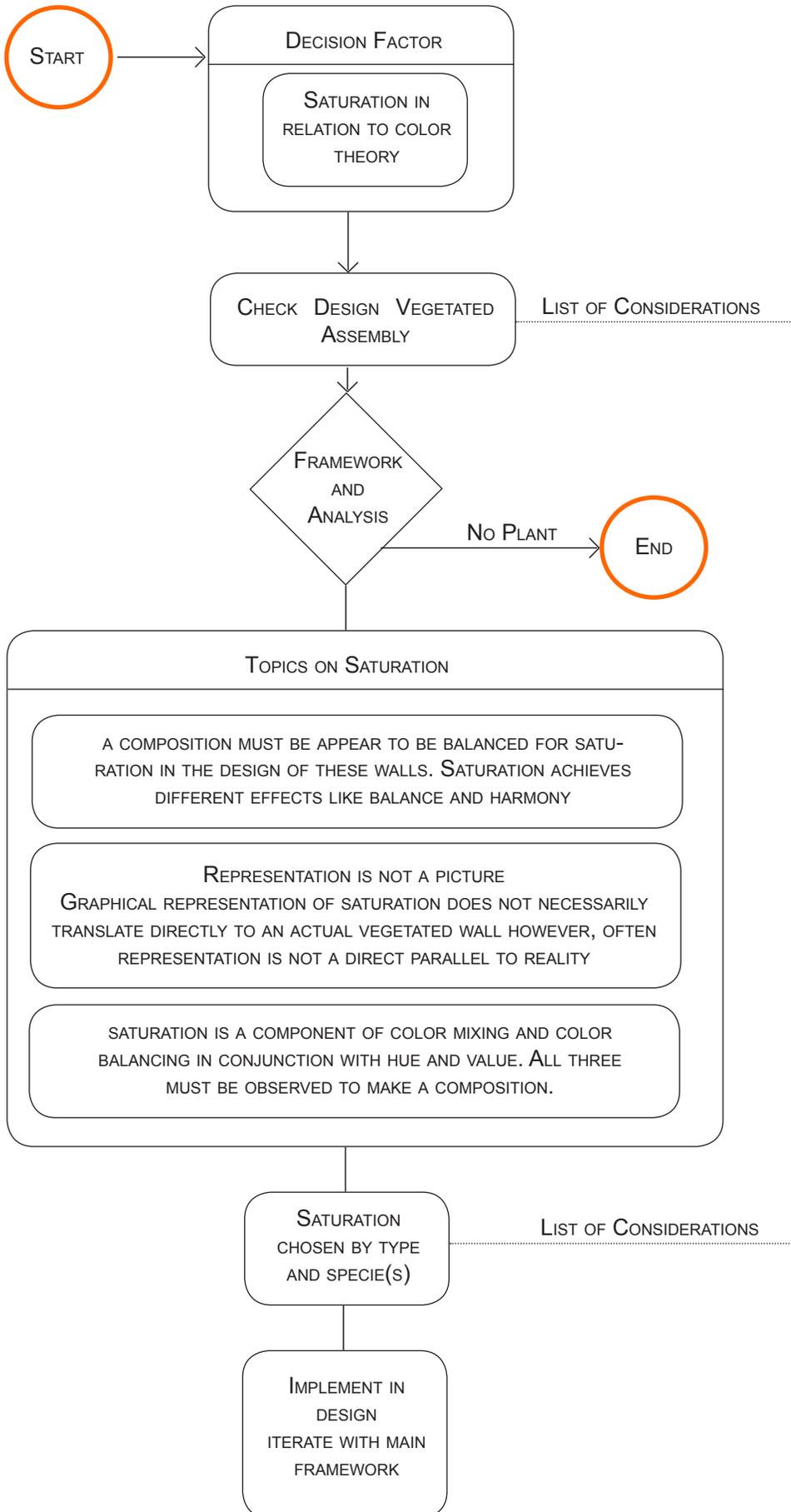
THERE ARE DIFFERENCES BETWEEN THE THREE DIMENSIONAL WORLD OF THE BUILT ENVIRONMENT AND THE TWO-DIMENSIONAL WORLD OF GRAPHIC REPRESENTATION WHICH MAKE THEM NOT DIRECTLY TRANSFERABLE.

THESE SIX COLOR HARMONIES CAN BE SUMMARIZED AS THE HARMONIES OF ADJACENT COLORS, OF OPPOSITE COLORS, OF SPLIT COMPLIMENTS, OF TRIADS, OF A DOMINANT TINT.

BIRREN ALSO EXPLAINS THAT THE EYE LOOKS FOR SIMPLE AND CLEAR DIVISIONS OF COLOR. PERHAPS THIS CAN BE FOUND IN THE INGRAINED HUMAN EYE'S TENDENCY TO FOCUS ON EDGES AND COLOR DIVISIONS.

COMPOSITIONS THAT ARE VAGUE OR BLURRED ARE DISTURBING, AND THE MIND DESIRES ORDER AND NEATNESS.

COLOR MIXING AUTHORS TO CONSIDER: JOHANNES ITTEN, WASSILY KANDISKY, FABER BIRREN, CHEVREUL, ARNHEIM



SATURATION CRITERIA

REMEMBER THAT ANY HUES CAN MAKE A COMPOSITION, BUT THAT THE COMPLEMENTARY SETS OFTEN CAN BEGIN TO CREATE HARMONY.

SATURATION CAN ALSO BE CONSIDERED THE INTENSITY OF A HUE WHEN USED IN A COMPOSITION.

THIS PURITY OF COLOR IS IMPORTANT TO THE OVERALL COMPOSITION OF AN IMAGE OR REPRESENTATION.

IF THE SATURATION OF AN IMAGE IS NOT EVEN, THEN THE IMAGE WILL APPEAR WASHED OUT OR INCOMPLETE. THIS CAN OCCUR IN THE OPPOSITE DIRECTION IF AN IMAGE IS OVER-SATURATED.

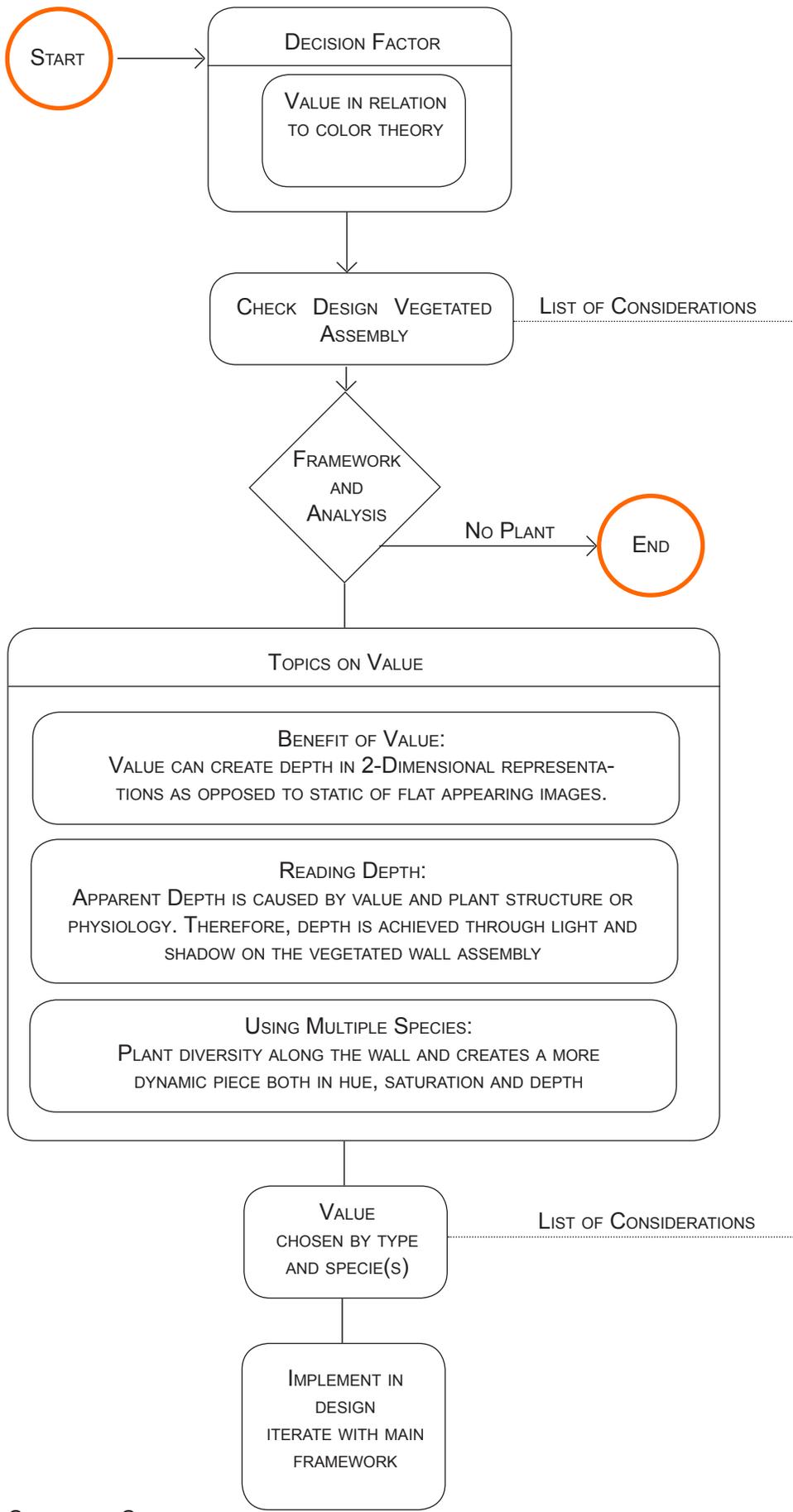
THEREFORE AN IMAGE CAN ACHIEVE BALANCE OR HARMONY THROUGH EVEN SATURATION.

IF THERE ARE A GREAT NUMBER OF HUES AND THE COMPOSITION APPEARS TO BE IN BALANCE IT IS FROM AN EVEN SATURATION AND THE COLOR ARE OF THE SAME HUE OR FAMILY OF ANALOGOUS HUES.

THE CHARACTERISTICS OF COLOR REVIEWED IN THE LITERATURE (HUE, SATURATION, AND VALUE) CAN BE QUANTIFIED AND SCALED, BUT SOLELY QUANTIFYING COLOR DOES NOT RELATE TO AN ARCHITECT ATTEMPTING TO REPRESENT A SPACE IN A TWO OR THREE DIMENSIONAL MANNER.

I RECOMMEND FINDING COLOR FOUND IN NATURE AS THESE ARE OFTEN IN COMPOSITION AND NOT OVER-SATURATED.

CONSIDER THESE:
ARNHEIM, PALLASMAA, AND THE THEORY OF PHENOMENOLOGY



VALUE SELECTION CRITERIA

DIFFERENT VALUES ARE ALMOST ALWAYS PRESENT IN REPRESENTATION. WITHOUT THEM AN IMAGE WILL OFTEN APPEAR FLAT, OR APPEAR TO HAVE NO DEPTH.

IMAGES CAN HAVE INCORRECT OR FALSE COLORS, COLOR THAT WE WOULD NOT SEE OR REPRESENT LIGHT NOT IN THE VISIBLE SPECTRUM, OR ARE SIMPLY EXCHANGED FOR COLORS FOUND IN NATURE

FOR EXAMPLE, A BROWN DOG IS BRIGHT ORANGE AND WITH THE CORRECT DEPTH OF VALUE WE WOULD STILL SEE THE INTENDED IMAGE.

FOR EXAMPLE WITH VEGETATED ASSEMBLIES: ALL OF THE PLANTS HAVE DIFFERENT VALUES AND SIZES CREATE DEPTH, WHERE SMALLER AND DARKER PLANTS RECEDE WHILE LIGHTER AND LARGER PLANTS COME TO THE FOREGROUND.

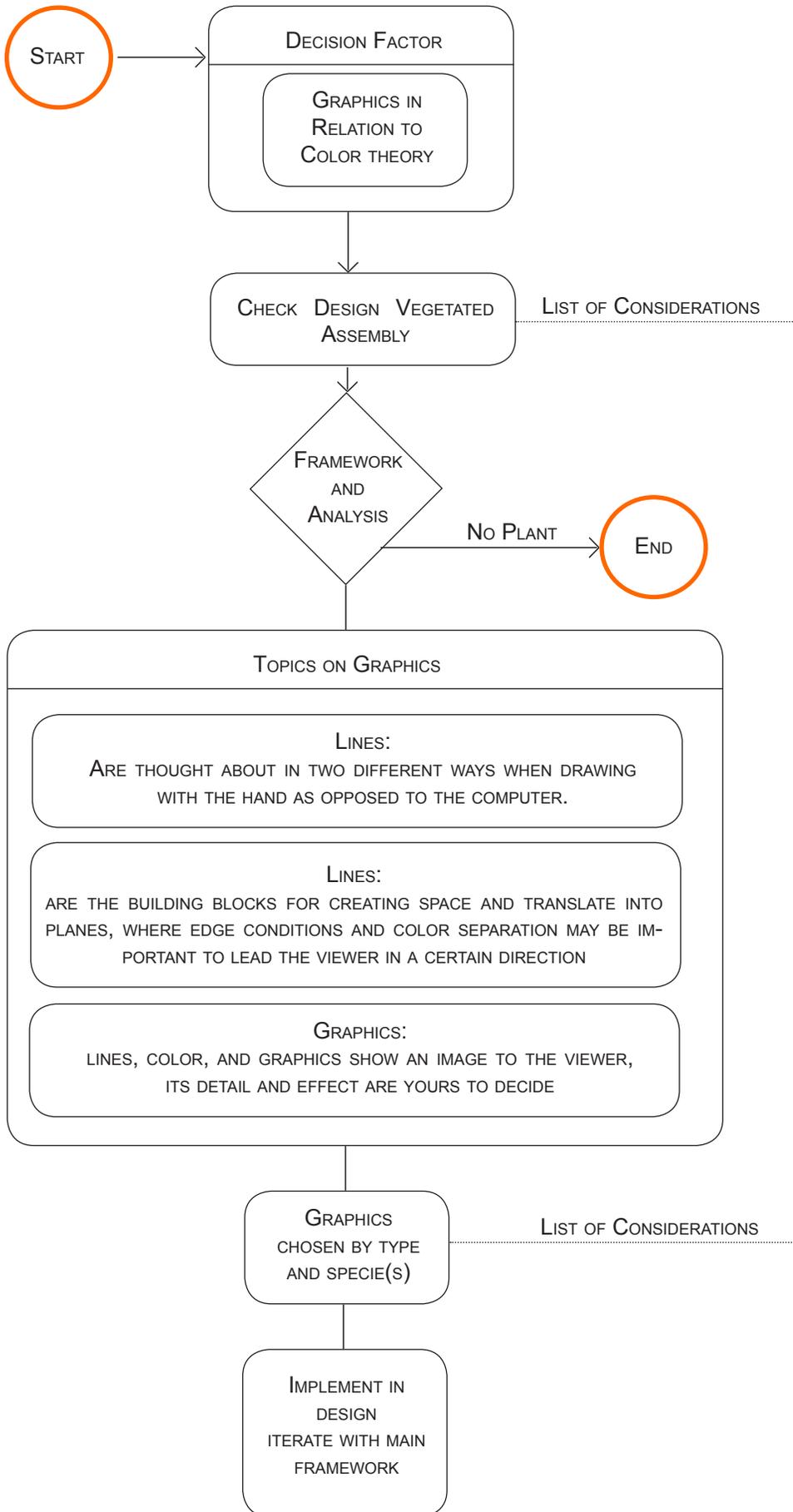
DEPENDING ON HOW YOU WANT THE WALL TO APPEAR, PLANTS CAN BE CHOSEN TO:

MAKE A WALL VISUALLY AND LITERALLY HAVE MORE DEPTH THOUGH DIFFERENT HUES AND SHADING PATTERNS THROUGH THE CHARACTERISTICS OF THE PLANTS

OR APPEAR FLAT WITH DIFFERENT EXPRESSIONS OF SIMILAR CRITERIA BUT CHOOSING ONLY ONE SPECIES OR A FINER OR SHALLOWER PLANT SPECIES.

YOUR EYE PERCEIVES DEPTH THOUGH THE DIFFERENCES OR HUES AND IN THE SHADOW FOUND AT THE EDGES OF DIFFERENT ADJACENT PLANTS.

CONSIDER LOOKING AT:
PATRICK BLANC, OR THE BOOK **FACADE GREENERY** BY **VAN UFFELEN**.



GRAPHICS SELECTION CRITERIA

TAKING A STEP BACK, A LINE IS THE SIMPLEST FORM OF DIVIDED, OR WITH MULTIPLE LINES, ENCLOSED SPACE. A LINE DELINEATES, AND CREATES AN EDGE.

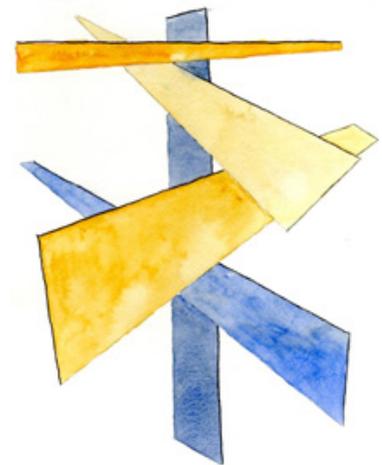
LINES ALSO RELATE TO THE CONTEXT OF THE MEDIUM, ITS RANGE AND EXTENT, OF THE TWO-DIMENSIONAL FRAME IN WHICH THEY REST.

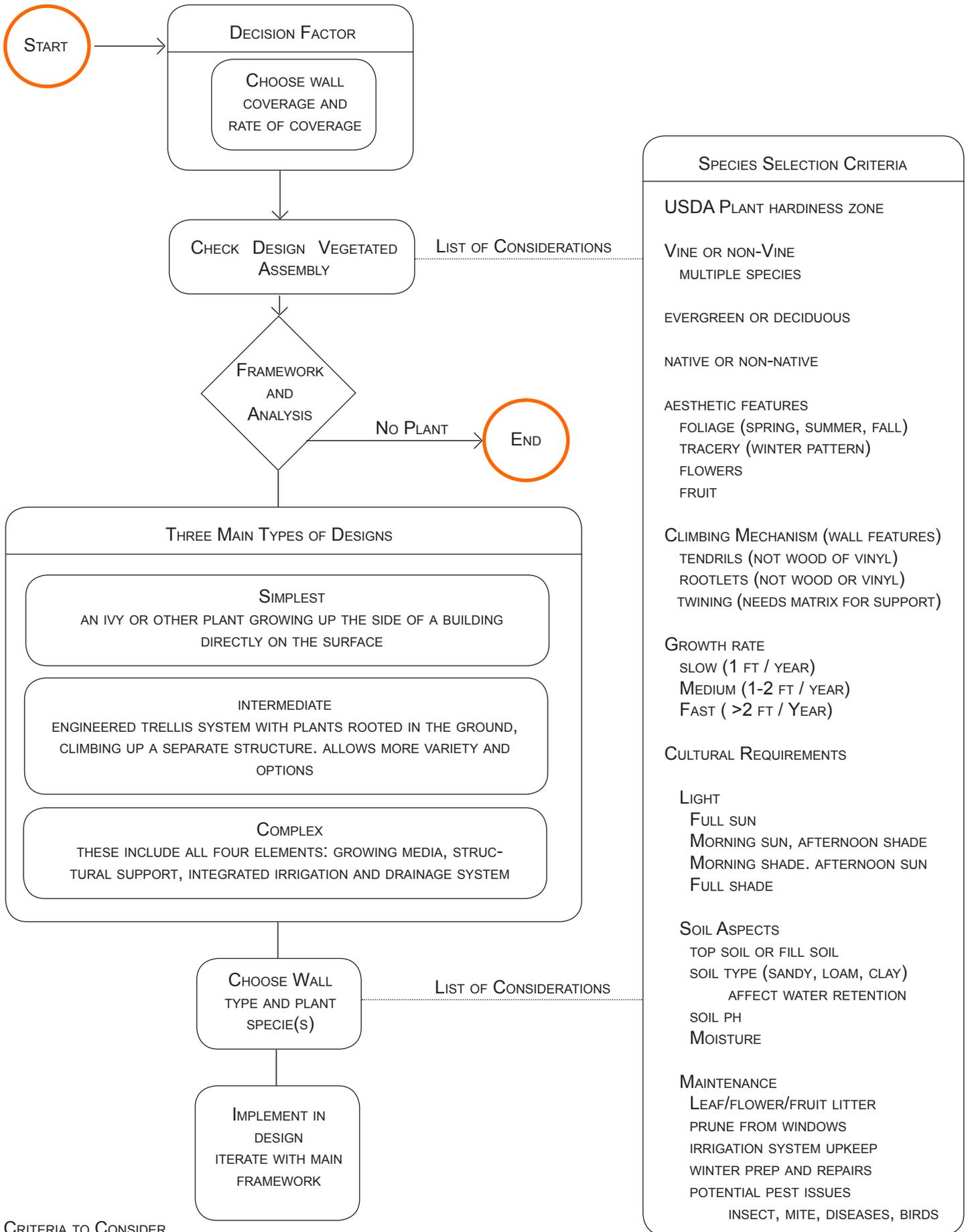
IF WE CONSIDER THAT THE EYE IS INVARIABLY ATTRACTED TO AN EDGE CONDITION, THEN LINES BECOME CRITICAL IN DESIGN AND COLOR.

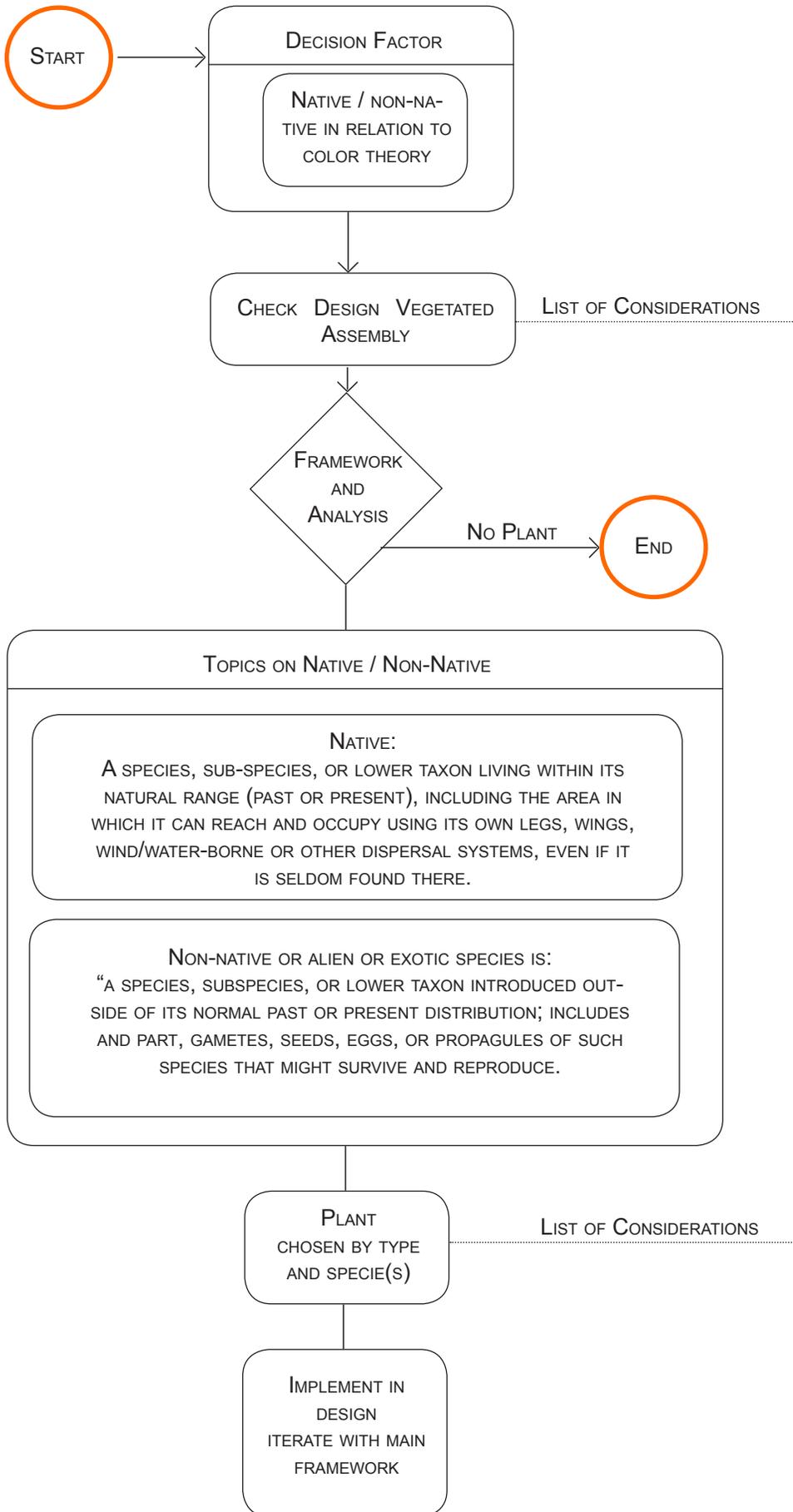
IN THE PRINCIPLE OF INTERPOSITION THAT ALBERS AND KLEE EXPLORED, USING FIELDS (ALBERS) AND LINES (KLEE) DEPTHS CAN BE CREATED OR REJECTED BASED ON POSITION.

THIS CONCEPT OF PROXIMITY AND POSITION TO CREATE OR DENY SPACE AND DEPTH WILL BE CRITICAL TO UNDERSTANDING COLOR AND ITS RESULTING EFFECTS.

HERE IS AN EXAMPLE OF FIGURE-GROUND AND HOW GRAPHICS CAN CREATE DEPTH AND SPACE.







NATIVE / NON-NATIVE CRITERIA

THIS SCIENTIFIC FOCUS ON SPECIES AS A REFERENCE IS WHAT WILL BE USED FOR DEFINING NATIVE AND NON-NATIVE PLANTS FOR THE PURPOSE OF THE STUDY. THE SPREAD OF NONNATIVE SPECIES DOES NOT STOP AT A STATE OR NATIONAL BORDER.

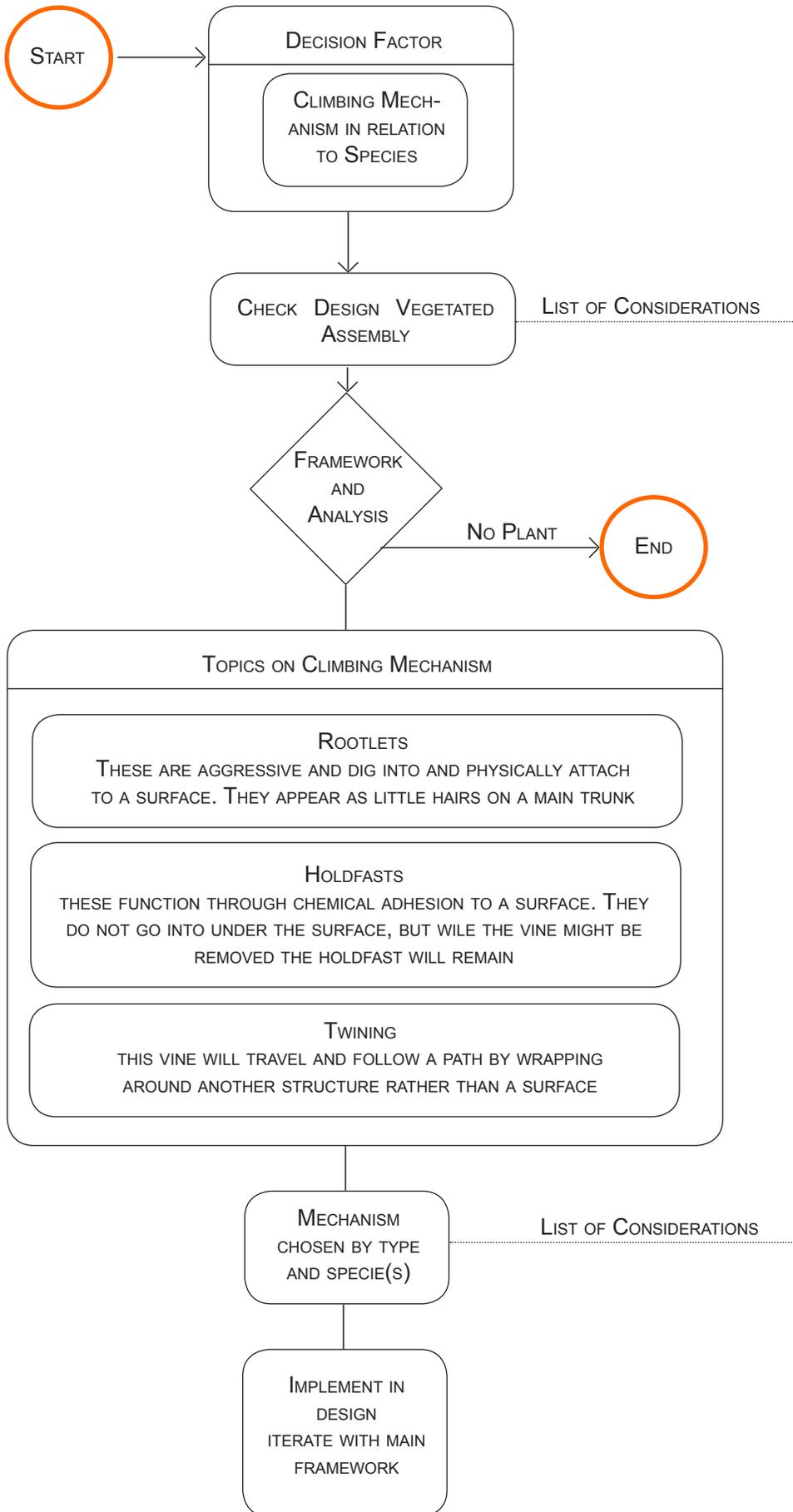
3 MAIN ISSUES:
NATIVE PLANTS ARE OFTEN SOLD IN A SPECIFIC REGION, WHILE NON-NATIVE PLANTS ARE MORE WIDESPREAD. THE FRAMEWORK WILL FOCUS ON PLANTS NATIVE TO THE AREA AND NONNATIVE CULTIVARS.

THE ECONOMICS INVOLVED IN GROWING NATIVES IS MORE EXPENSIVE THAN AND NOT AS ESTABLISHED AS CURRENTLY GROWN CULTIVARS, THUS NOT AS WIDELY AVAILABLE.

THE INDUSTRY HAS A WIDE VARIETY OF DEFINITIONS FOR NATIVE PLANTS AND THE REGULATION THAT SURROUNDS THEM, MAKING IT DIFFICULT TO TRULY KNOW WHAT A CONSTITUTES A NATIVE PLANT.

3 STAGES TO AN INVASIVE PLANT:
WHEN IT IS FIRST INTRODUCED (TRANSPORTED BY HUMANS ACROSS A MAJOR GEOGRAPHICAL BARRIER), THEN IS NATURALIZED (OVERCOMING ABIOTIC AND BIOTIC BARRIERS TO SURVIVAL AND REGULAR REPRODUCTION) AND THEN THE PLANT BECOMES INVASIVE BY MOVING TO A SITE DISTANT FROM THE FIRST INDUCTION. THERE ARE THREE STAGES OF INVASION: WIDESPREAD BUT RARE (IVA), LOCALIZED BUT DOMINANT (IVB) AND WIDESPREAD AND DOMINANT (V)

SEE THESE FOR MORE INFORMATION ON CULTIVAR AND NATIVE AND NON-NATIVE: (NORCINI, 2007) AND THE VIRGINIA NURSERY & LANDSCAPE ASSOCIATION COLAUTTI, & MACISAAC, H. (2004).



CLIMBING MECHANISM CRITERIA

PLANTS ARE PARTICULAR TO THE SITE IN WHICH THEY LIVE. EACH KIND OF PLANT HAS A PARTICULAR NICHE THAT ALLOWS THEM TO BE MOST SUCCESSFUL. WHEN GIVEN THE CORRECT CONDITIONS PLANTS ARE FAST GROWING AND TENACIOUS, ESPECIALLY VINES AND CRAWLERS.

BUT THE CONDITIONS THAT WE ATTEMPT TO MIMIC AND CREATE MUST MATCH THE SPECIES OF PLANTS DESIGNERS WANT TO IMPLEMENT.

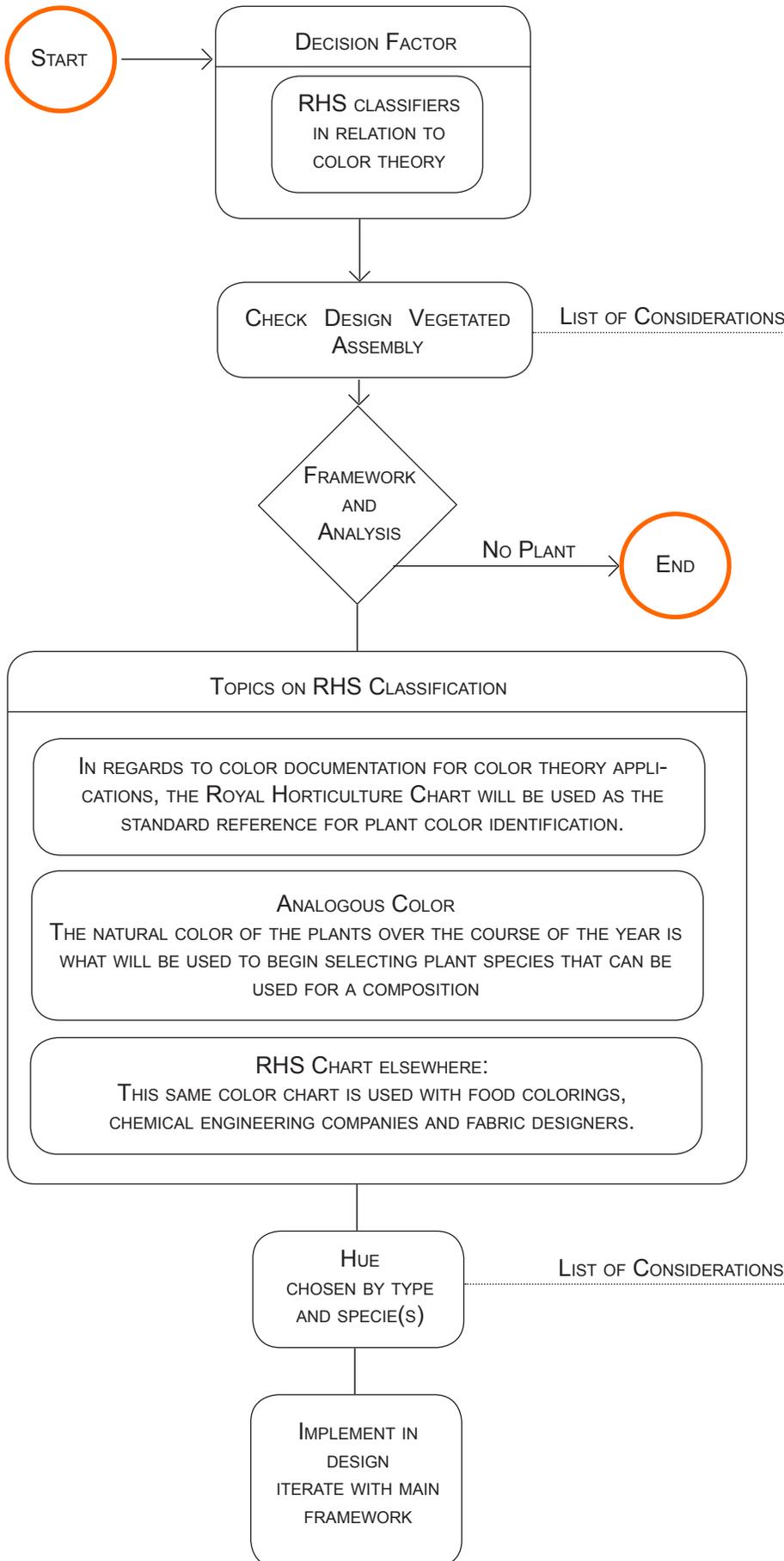
EACH TYPE OF CLIMBING MECHANISM MUST BE USED TO MAINTAIN THE SURVIVABILITY OF THE PLANT AND THE STRUCTURE OR SURFACE OF THE BUILDING.

DESIGNERS CANNOT MIX UP TYPES OF CLIMBING MECHANISMS AND ATTACHMENT STRUCTURES WHILE NOT PROVIDING WATER, ADEQUATE AMOUNT OF SUNLIGHT AND SPACE.

THIS SOUNDS LIKE COMMON SENSE BUT EACH PLANT IS PARTICULAR TO ITS SPECIES' NEEDS AND THE CONDITIONS GIVEN BY THE BUILT ENVIRONMENT.

THE DESIGNER NEEDS TO LOOK AT THE SITE AND HABITAT DIVERSITY AND DETERMINE HOW MAN INTERACTS WITH NATURE, BUILDING IN THE POSSIBILITY FOR FLEXIBLE DESIGNS IN THE FUTURE

DESIGNER SHOULD: USE THE FULL POTENTIAL OF THE SITE, CONSERVE OR DEVELOP DIVERSITY OF HABITAT; ENCOURAGE A FULL RANGE OF ORGANIC LIFE, ENCOURAGE THE FULL CYCLE OF GROWTH FROM BIRTH TO DECAY, DEVELOP BALANCE SELF-SUSTAINING COMMUNITIES, CONTROL THE SYSTEM OF MANAGEMENT, CREATE MAXIMUM VARIETY OF OPPORTUNITY FOR MAN AND NATURE TO COEXIST, CREATE A COHERENT LANDSCAPE STRUCTURE AND DESIGN IN FOUR DIMENSIONS



RHS CLASSIFICATION CRITERIA

A SCHEME CAN BE ABSTRACTED FROM THE PLANTS BASED ON ANALOGOUS OR COMPLIMENTARY COLORS, REFERENCED AGAINST THE ROYAL HORTICULTURE SOCIETY'S MANUAL.

IT IS UP TO THE DESIGNER TO CHOOSE WHAT SORT OF COMPOSITION TO START FROM.

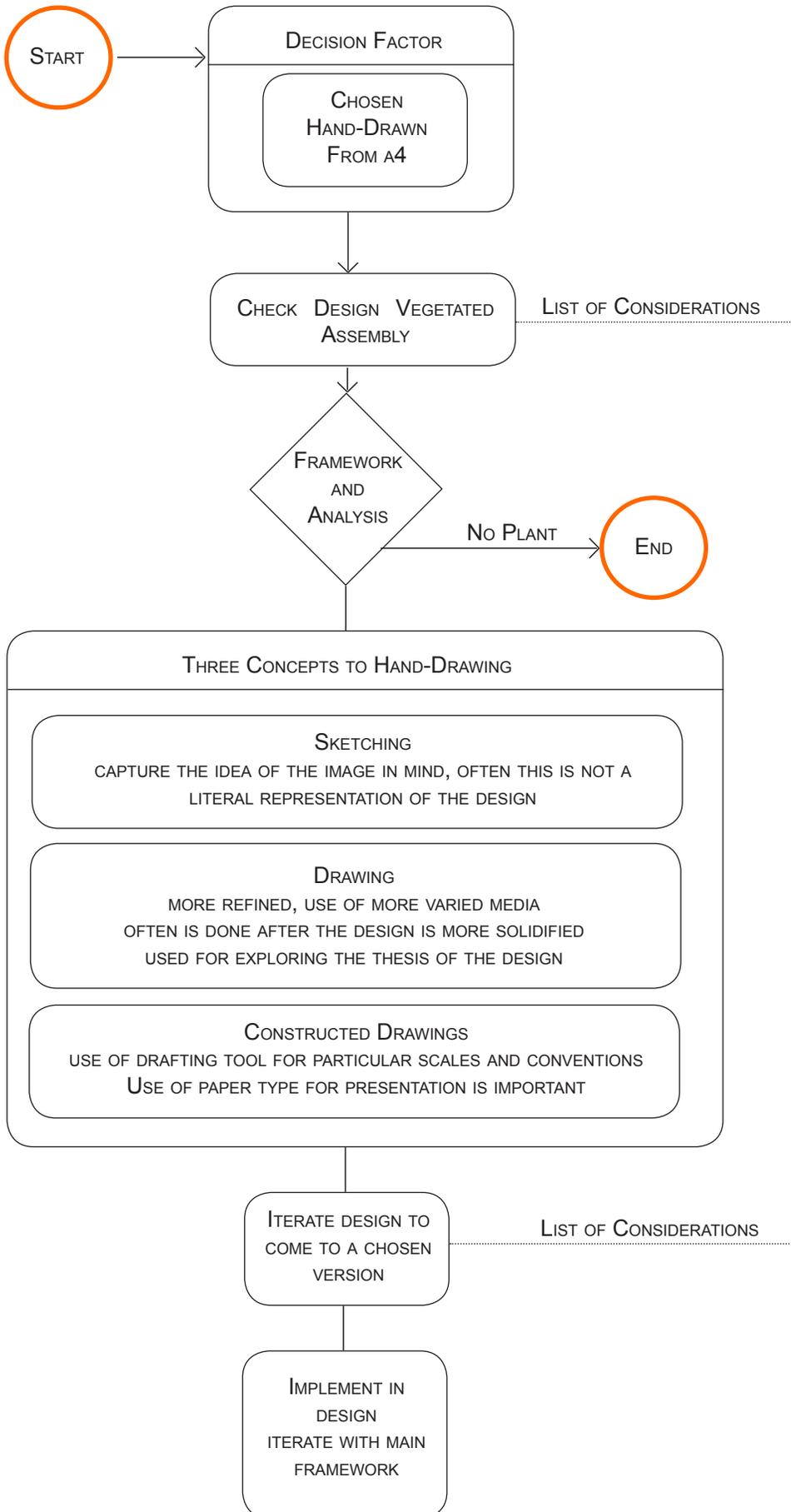
FOR EXAMPLE A PLANT DISPLAYS A LIGHT YELLOW GREEN, MIDDLE, LIGHTER GREEN, AND THEN FULL GREEN. THIS WOULD BE AN EXAMPLE OF ANALOGOUS COLOR.

IF YOU TOOK THE RED FROM THE PETALS OF ITS FLOWER AND THEN THE FULL GREEN FROM ITS LEAVES, IT IS A COMPLEMENTARY COLOR COMPOSITION. IN REVERSE, IF AN ABSTRACTED COMPOSITION IS CREATED, PLANTS THAT HAVE SIMILAR COLOR CAN BE SELECTED AND THEN PLACED INTO A SYSTEM OF MOSAIC.

BY SELECTING PLANTS BASED ON POSITIVE CHARACTERISTICS AS EXPLAINED BY THE CHOOSING BY ADVANTAGES MODEL, PLANTS CAN BE PAIRED BASED ON THE BEST POSSIBLE OUTCOME, WHILE CONSIDERING ALL OF THE CRITERIA, NOT THOSE ONLY LIMITED TO COLOR THEORY.

AN EXAMPLE OF ANALOGOUS COLOR FROM A BROWN LEAF IN WATERCOLOR





METHODS + SELECTION CRITERIA

REMEMBER PERSONAL MASTERY OF A TECHNIQUE IS A PERSONAL DECISION IN DESIGN AND REPRESENTATION:

MEDIA TYPE:
 PENCIL
 COLOR PENCIL
 PEN
 CHARCOAL
 PASTEL
 WATERCOLOR
 PRISMA MARKERS
 PAINTS
 OIL
 ACRYLIC

PAPER TYPE:
 MATT
 SEMI-GLOSS
 GLOSSY

CONSIDER PERSONAL DRAFT TOOLS
 WHAT IS AROUND OR AVAILABLE FOR USE

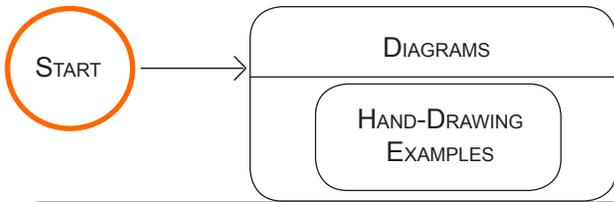
CONSIDER TECHNICAL EXPERTISE OF THE PROFESSOR AND OTHER ASSISTANTS
 WHAT CAN THEY HELP YOU WITH

CONSIDER TYPE OF PRESENTATION
 DISTANCE AND DETAIL

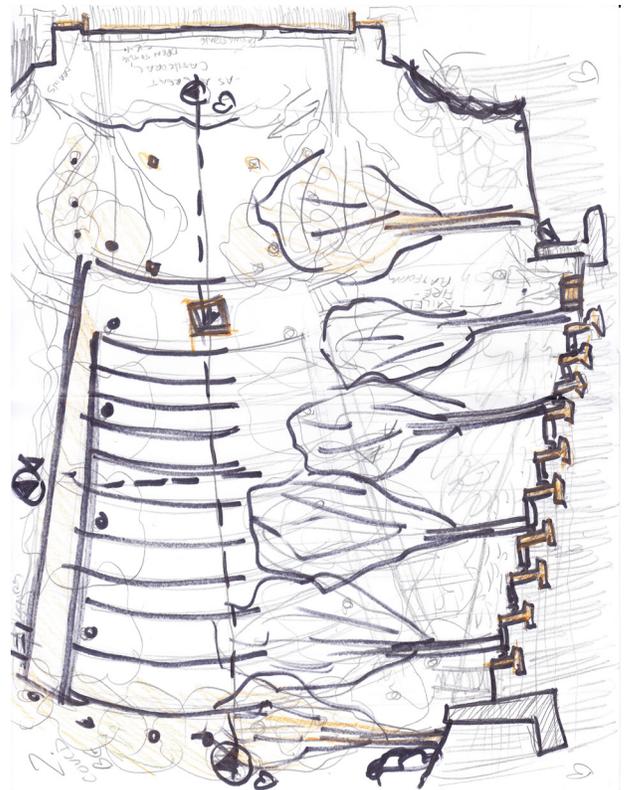
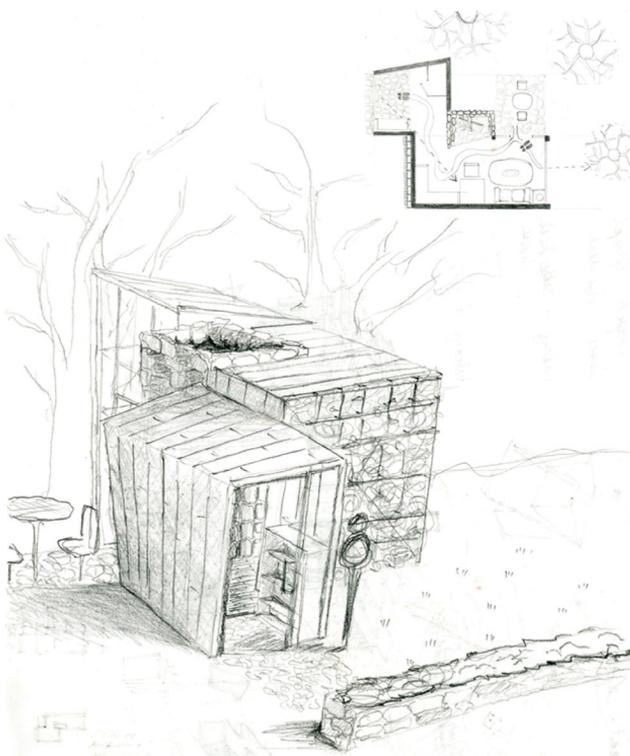
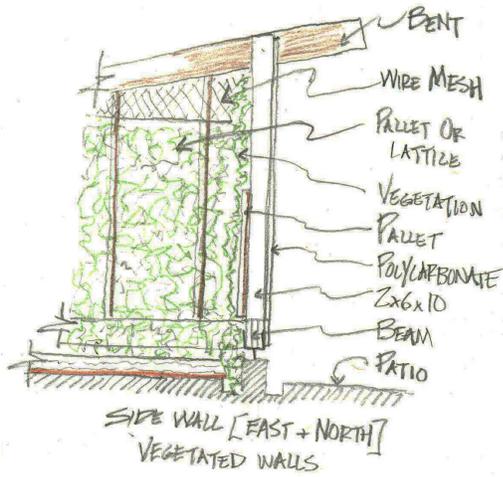
CONSIDER THE AUDIENCE
 WHOM AND WHY THIS DESIGN

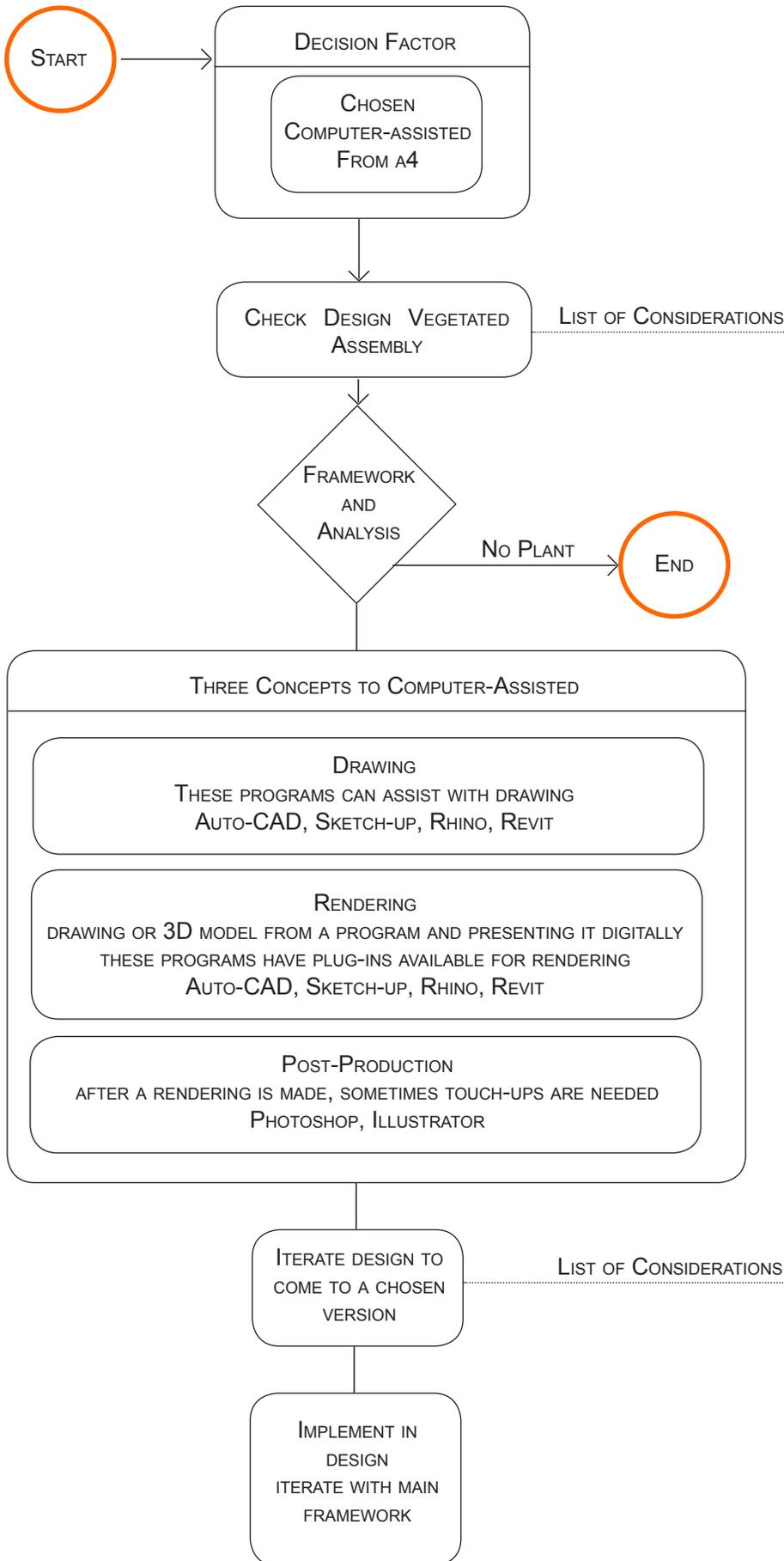
USEFUL LITERATURE:
 DESIGN DRAWING EXPERIENCES
 BY: WILLIAM K. LOCKART

ARCHITECTURAL REPRESENTATION
 HANDBOOK
 BY: LASEAU



EXAMPLE HAND-DRAWING EXAMPLES





METHODS + SELECTION CRITERIA

REMEMBER PERSONAL MASTERY OF A TECHNIQUE IS A PERSONAL DECISION IN DESIGN AND REPRESENTATION:

THIS IS NOT AN EXHAUSTIVE LIST, BUT PROGRAMS WITH EASIER LEARNING CURVES. ALSO REMEMBER TO CONSIDER THE LIMITATIONS OF EACH PROGRAM.

2+3 DIMENSIONAL TOOLS
 AUTO-CAD ARCHITECTURE
 GOOGLE SKETCH-UP
 RHINOCEROS
 REVIT
 ADOBE SUITE PRODUCTS
 PHOTOSHOP
 ILLUSTRATOR

CONSIDER PERSONAL-COMPUTER
 WHAT IS AROUND OR AVAILABLE FOR USE
 PROGRAMS HAVE DIFFERENT LEVELS OF RENDERING CAPABILITY

CONSIDER TECHNICAL EXPERTISE OF THE PROFESSOR AND OTHER ASSISTANTS
 WHAT CAN THEY HELP YOU WITH

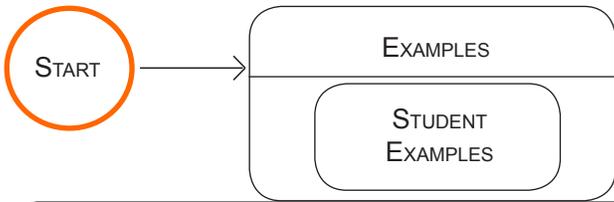
CONSIDER IS THE PROGRAM FREE OR AVAILABLE OR COSTS MONEY

CONSIDER TYPE OF PRESENTATION
 DISTANCE AND DETAIL

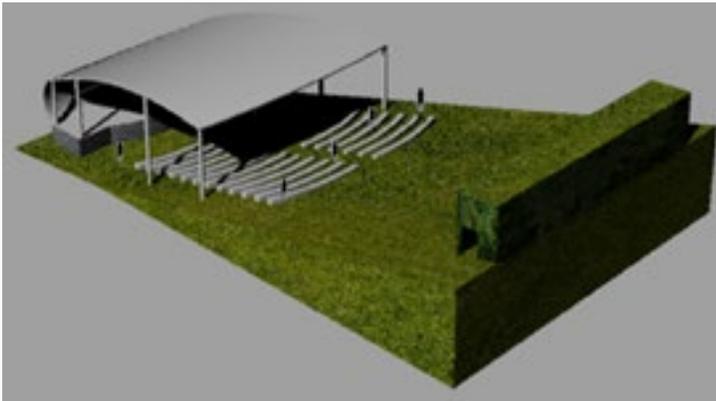
CONSIDER THE AUDIENCE
 WHOM AND WHY THIS DESIGN

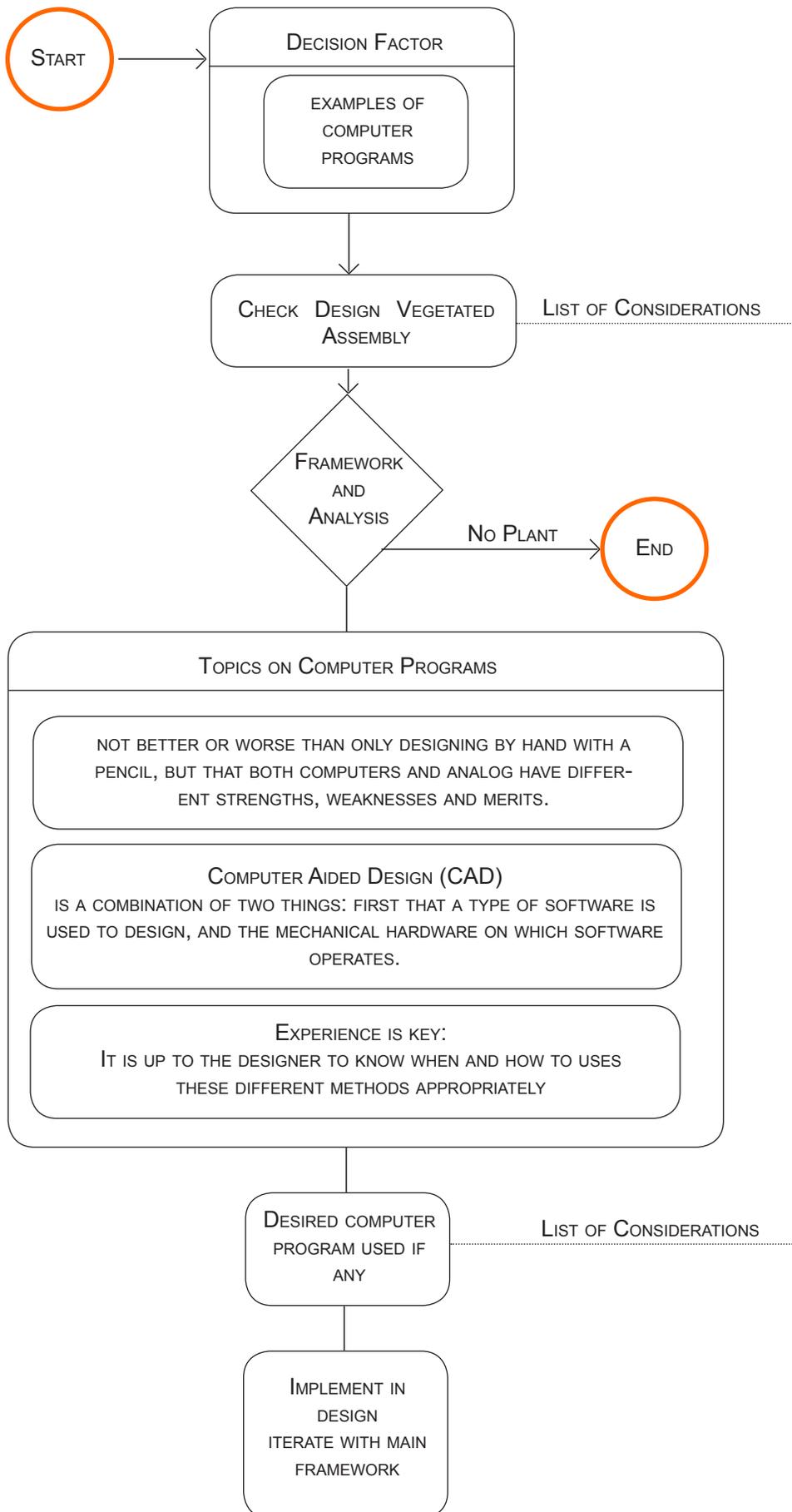
USEFUL LITERATURE:
 DESIGN DRAWING EXPERIENCES
 BY: WILLIAM K. LOCKART

ARCHITECTURAL REPRESENTATION HANDBOOK
 BY: LASEAU



EXAMPLES OF STUDENTS USING COMPUTERS





COMPUTER PROGRAM CRITERIA

THE COMPUTER AND INSTALLED PROGRAMS (SOFTWARE) ARE TOOLS THAT HELP DESIGNERS TO DESIGN. DEPENDING ON THE TASK AT HAND, CAD CAN BE A GREAT RESOURCE. HOWEVER, NOT ALL DESIGN SHOULD BE DONE ON THE COMPUTER ALONE.

PROGRAMS OFTEN USED: PHOTOSHOP, RHINOCEROS, GRASSHOPPER, AND GOOGLE SKETCH-UP.

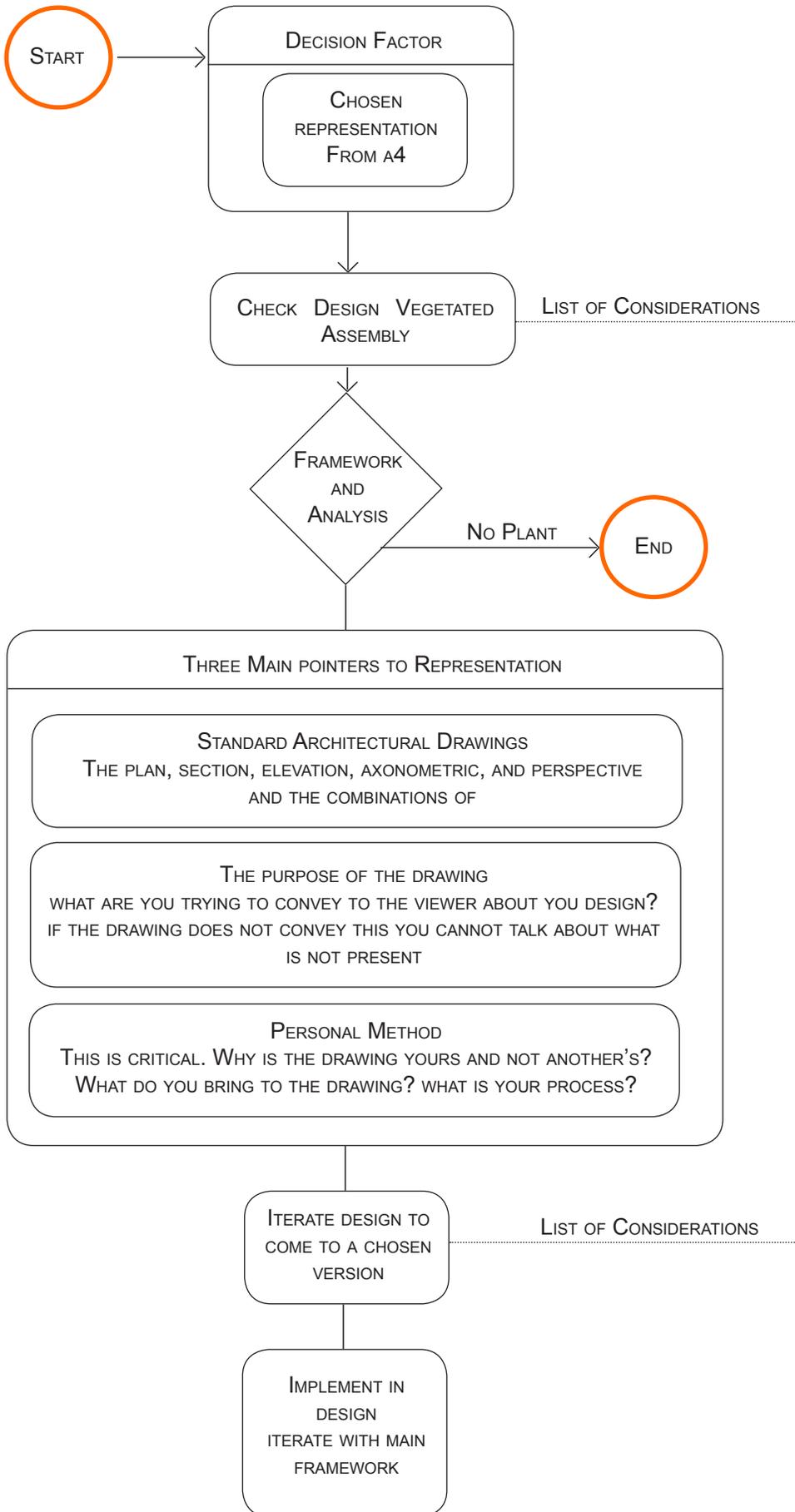
THERE ARE MULTIPLE PROGRAMS AS DESIGNERS AND STUDENTS NEED OPTIONS, AS NOT ALL ARE COMFORTABLE WITH ALL TYPES OF SOFTWARE. TECHNOLOGY AND SOFTWARE EVOLVE QUICKLY, CHANGING WITH GREAT SPEED.

THESE PROGRAMS WILL SHOW POSSIBLE WAYS OF REPRESENTING VEGETATED AND LIVING WALLS WITH THE MAIN FOCUS BEING IN METHODS USED THROUGHOUT THE WHOLE PROCESS OF DESIGNING SUCH WALLS, RATHER THAN THE SPECIFIC PROGRAMS THEMSELVES.

THE FIRST PROGRAM IS ADOBE PHOTOSHOP. PHOTOSHOP ALLOWS DESIGNERS TO AUGMENT AND CREATE IMAGES AS A POST-RENDERING PROGRAM.

THE SECOND PROGRAM IS RHINOCEROS OR RHINO. RHINO ALLOWS DESIGNERS TO WORK IN 3-DIMENSIONAL SPACES TO CREATE OBJECTS. GRASSHOPPER IS THE THIRD PROGRAM OR 'PLUG-IN' FOR RHINO

GOOGLE SKETCH-UP IS THE FOURTH PROGRAM. THIS PROGRAM IS A SIMPLER AND LESS COSTLY VERSION OF RHINO AND IS A 3-DIMENSIONAL REPRESENTATION PROGRAM. DEPENDING ON THE VERSION IT IS EVEN OFFERED FOR FREE TO DOWNLOAD.



METHODS + SELECTION CRITERIA

REMEMBER PERSONAL MASTERY OF A TECHNIQUE IS A PERSONAL DECISION IN DESIGN AND REPRESENTATION:

THIS IS PERHAPS THE MOST DIFFICULT AREA TO GIVE A GENERIC ANSWER TO WHAT REPRESENTATION IS, ESPECIALLY IN ARCHITECTURE.

THERE IS SIMPLY NOT A CORRECT OR RIGHT ANSWER. THE DESIGN PROJECT COMBINED WITH YOUR OWN PERSONAL TECHNICAL SKILL WILL YIELD YOUR REPRESENTATIONAL STYLE AND METHODS.

OFTEN THERE IS A SPIRIT OF THE TIMES TO THE METHOD OF REPRESENTATION. CALLED A ZEITGEIST, IT IS YOU CHOICE TO EMULATE OR DEVIATE FROM THE CURRENT DESIGN NORM.

HOWEVER WHILE THE IMPLEMENTATION AND RESULTING REPRESENTATION IS UNIQUE, TECHNIQUES AND PROGRAMS IMPLEMENTED ARE MORE STANDARD.

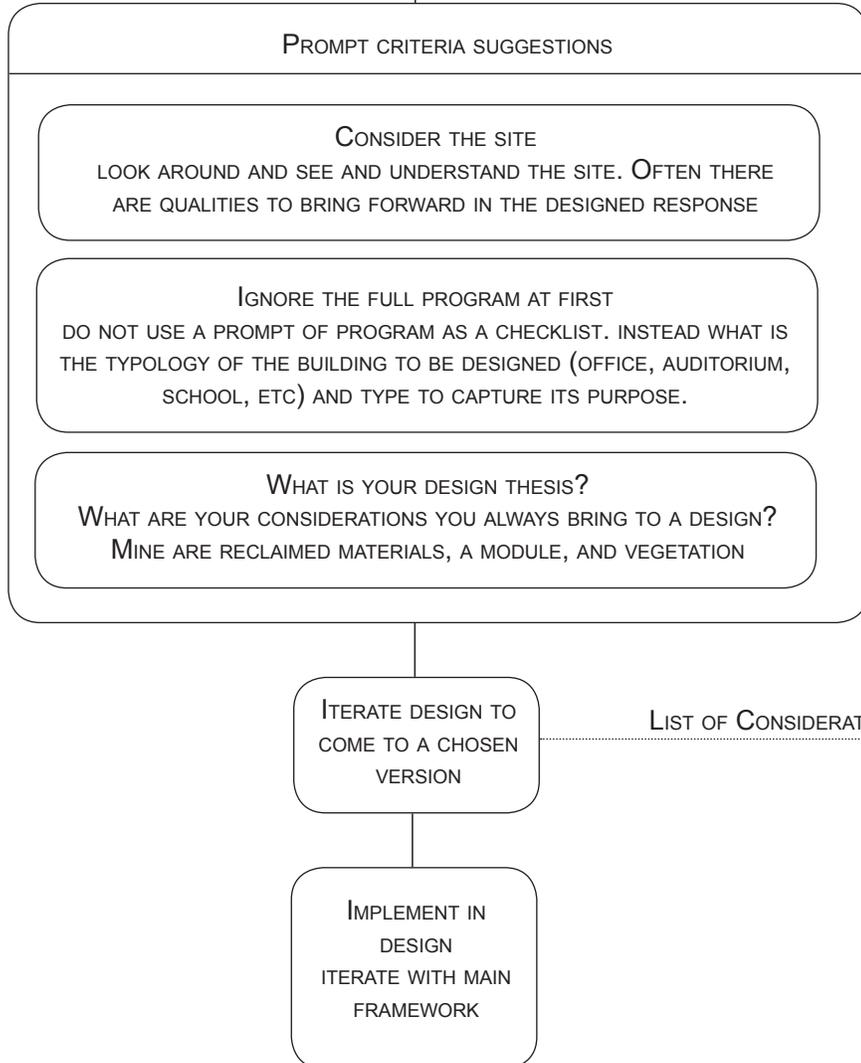
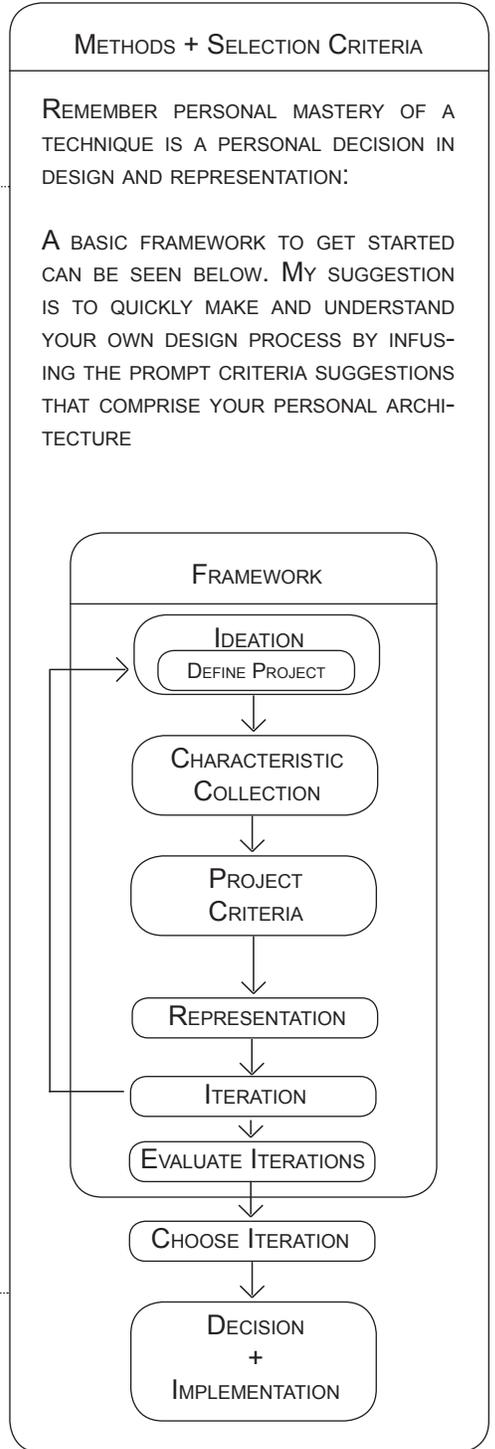
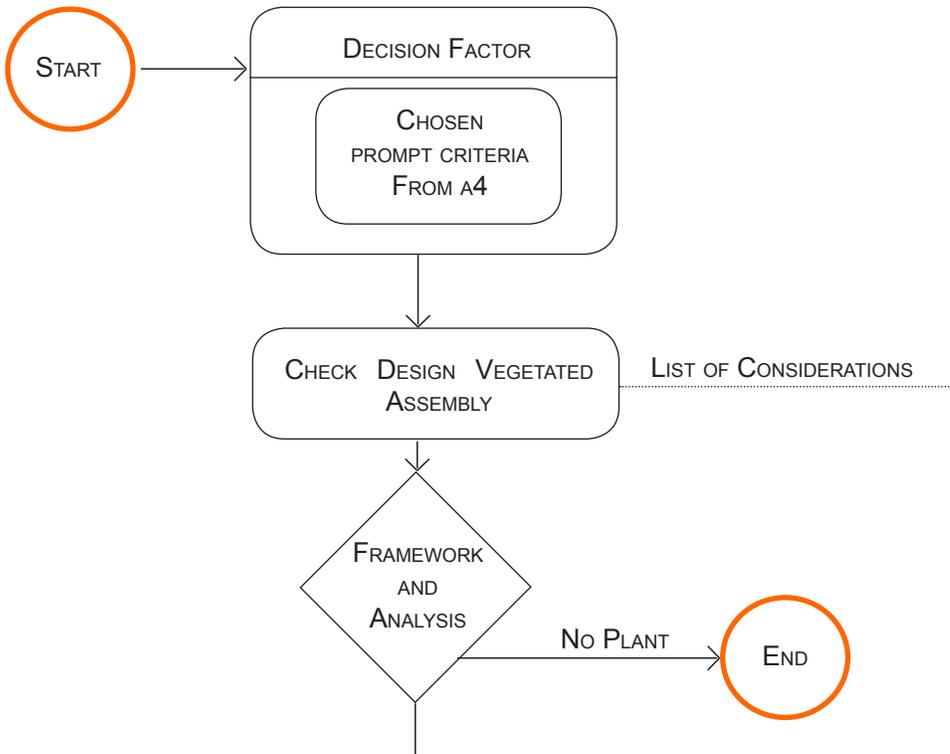
BOTH DIGITAL AND ANALOG TECHNIQUES WILL HELP US TO REPRESENT DESIGNS, HOWEVER IT IS THE UNIQUE DESIGN IMPLEMENTATION THAT WILL YIELD YOUR REPRESENTATION (A16, A17)

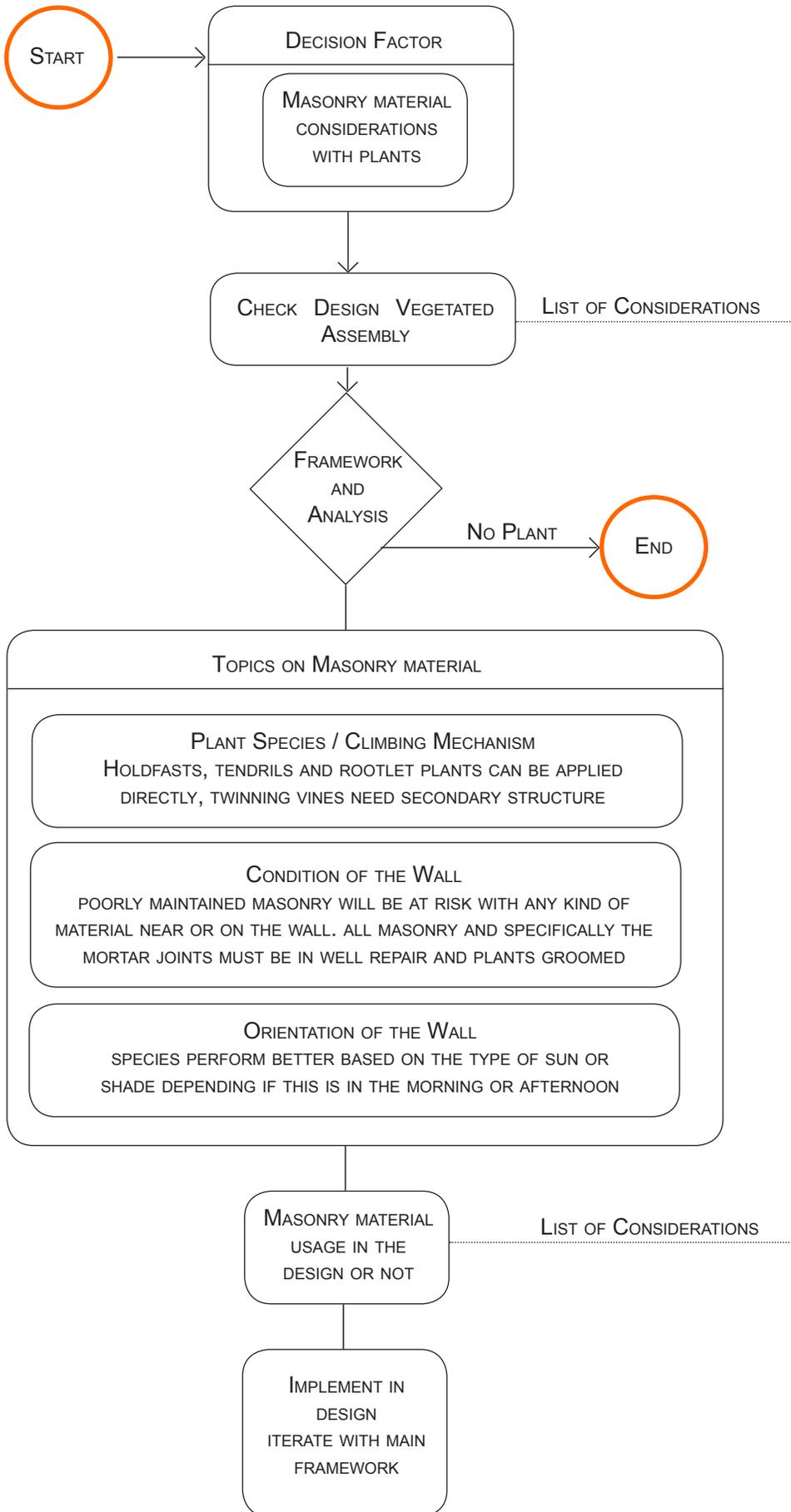
CONSIDER TYPE OF PRESENTATION
DISTANCE AND DETAIL

CONSIDER THE AUDIENCE
WHOM AND WHY THIS DESIGN

USEFUL LITERATURE:
EXAMPLES FROM YOUR FAVORITE ARCHITECTS. PERSONALLY,

GLEN MURCUTT, FRANK LLOYD WRIGHT, RENZO PIANO, SHIGERU BAN AND TADAO ANDO





MASONRY MATERIAL CRITERIA

THERE ARE TWO MAIN KINDS OF MASONRY INCLUDING BRICKS, CONCRETE MASONRY UNITS, AND STONE.

THESE TWO ARE DIFFERENT IN THAT A BRICK IS TYPICALLY FIRED CLAY, WHILE A STONE IS CUT TO SHAPE.

BOTH FUNCTION IN A SIMILAR MANNER FOR THE PURPOSES OF THE VEGETATED WALL.

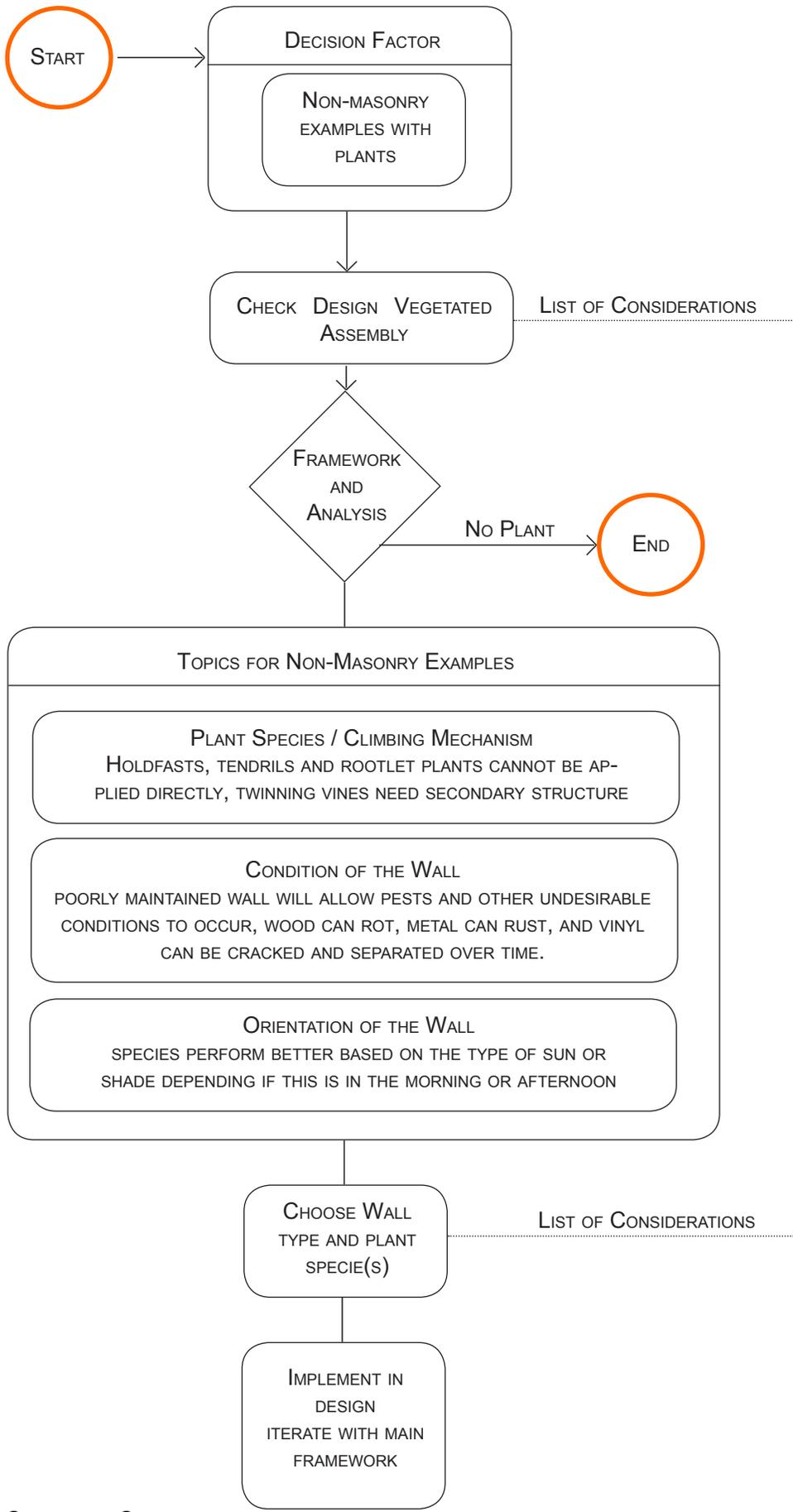
THESE WALLS CAN HAVE VEGETATION DIRECTLY APPLIED, HOWEVER THEY MUST BE MAINTAINED WELL. THIS MEANS MORTAR AND OTHER JOINTS ARE NOT ERODED, GIVING ROOTLETS OTHER PLACES TO ATTACH OTHER THEN THE MAIN SURFACE.

ROOTLETS ARE THE MOST AGGRESSIVE METHOD OF ATTACHMENT THAT VINES CAN HAVE ON WALLS. HOWEVER, FULL VEGETATED WALLS WITH MEDIUM ARE A SEPARATE LAYER FROM THE MAIN BUILDING ENVELOPE AND HAVE INTERNAL LAYERS THAT PROTECT THE WALL.

DUE TO THE FACT, THE WALLS THAT WILL BE CONSIDERED HERE ARE VINES ON WALLS IN THE TRADITIONAL SENSE AS CONTEMPORARY WALLS WITH MANY LAYER DO NOT RUN INTO THESE ISSUES AS OFTEN.

WALLS SHOULD ALSO CONSIDER:

- STRUCTURE
- METHOD OF CLIMBING
- MOISTURE
- ORIENTATION
- TYPE OF VEGETATED WALL
- TYPE OF MASONRY WALL
- LOAD BEARING, DRY-STACKED OR VENEER MASONRY WALLS
- MAINTENANCE



NON-MASONRY CRITERIA

MOST OF THESE CONSIDERATIONS ARE FOR WOOD AND VINYL SIDING, TYPICAL ON MANY HOMES. MASONRY IS ONE OF THE MOST DURABLE MATERIALS. THIS MEANS THAT THE LIFECYCLE AND CONSIDERATIONS THAT MASONRY COULD WITHSTAND, SUCH AS MOISTURE AND PESTS, ARE NOW CRITICAL TO THE SUCCESS OF THESE WALLS.

WHEN DESIGNING, IT IS INCREDIBLY IMPORTANT TO UNDERSTAND THE MATERIALS THAT GO INTO THE BUILDING ENVELOPE, NOT ONLY WHAT COMPRISES THE VEGETATED WALL ITSELF AS THE ENVELOPE IS A COMPREHENSIVE SYSTEM.

SOME EXAMPLES OF ANECDOTAL KNOWLEDGE INCLUDE:

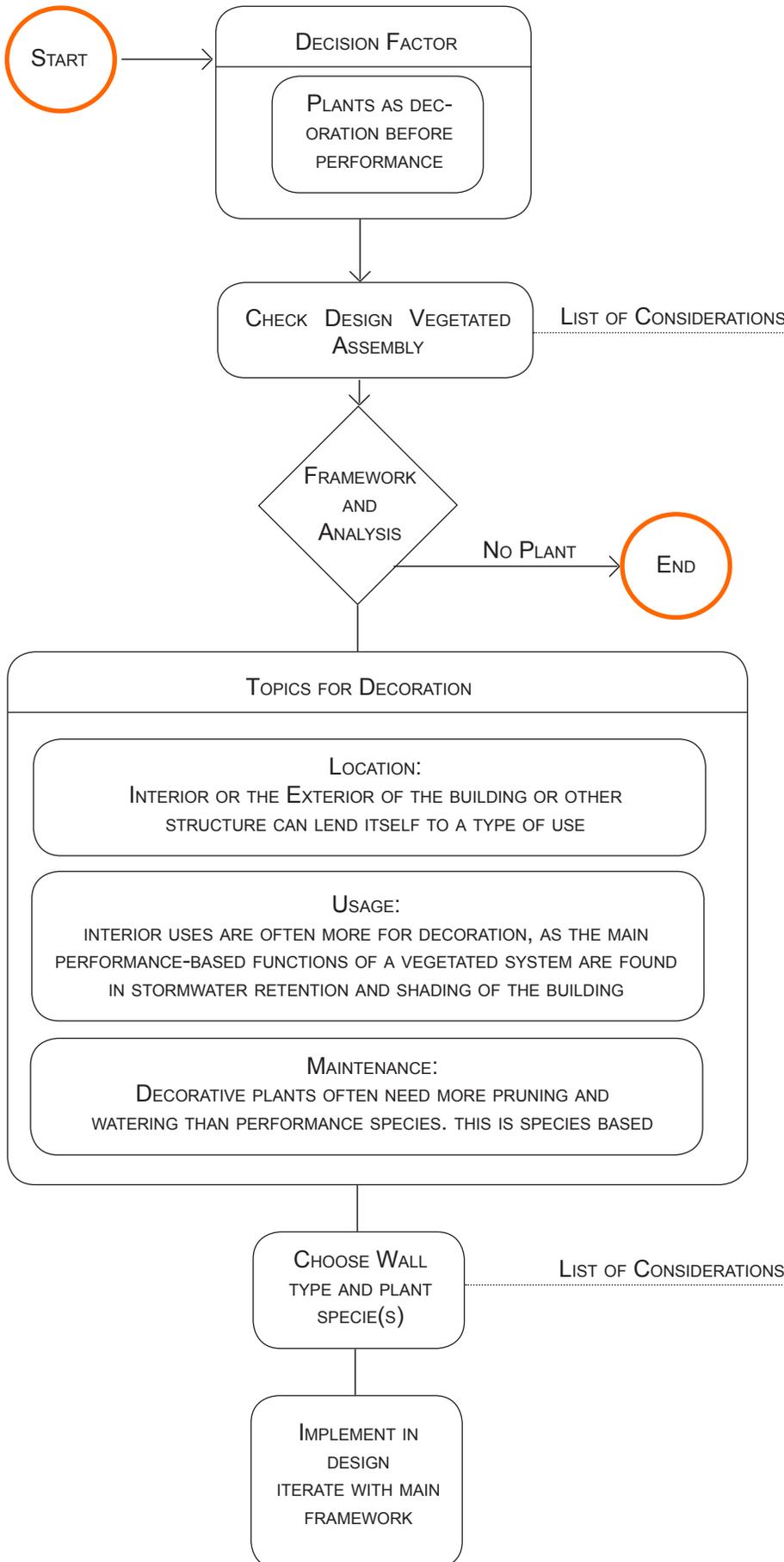
MOST PLANTS WILL NOT ATTACH TO GLASS SURFACES, EVEN HOLDFASTS.

ROOTLETS WILL NOT GRAB WELL TO METAL, BUT HOLDFASTS WILL ADHERE TO WOOD AND PAINTED METAL. HOWEVER, ROOTLETS WILL DAMAGE WOOD CONSIDERABLY IN TIME.

CONSIDER THE MATERIAL FOR POTENTIAL MOISTURE DAMAGE. THIS IS ESPECIALLY IMPORTANT FOR UNTREATED METAL AND WOOD AS THESE WILL RUST OR ROT. FOR VINYL, THE ROOTLETS CAN WORK THE LAYERS APART.

ALSO WITH PLANTS DIRECTLY ONTO THE SURFACE, BUGS AND ANIMALS WILL BEGIN TO INHABIT THE SURFACE. THIS CAN BE GOOD OR BAD DEPENDING ON THE PROJECT AND ITS INTENTIONS.

ALL OF THESE CONSIDERATIONS CAN AND ARE MITIGATED BY ROUTINE AND PROPER MAINTENANCE. FOR EXAMPLE, OVER TIME WINDOWS WILL NEED TO BE CLEARED OF VINES, AS IN MASONRY.



DECORATION CRITERIA

THESE CRITERIA ARE NOT MEANT TO BE A DECIDING FACTOR. INSTEAD UNDERSTANDING THE PURPOSE OF THE VEGETATED WALL CAN HELP TO INFORM DESIGN DECISIONS.

FOR EXAMPLE:

A DECORATIVE WALL CAN BE MORE VARIED IN ITS PLACEMENT AND PLANT SPECIES. THESE WALLS ARE NOT NECESSARILY MEANT TO BE LOW MAINTENANCE OR BE STORMWATER CATCHMENT.

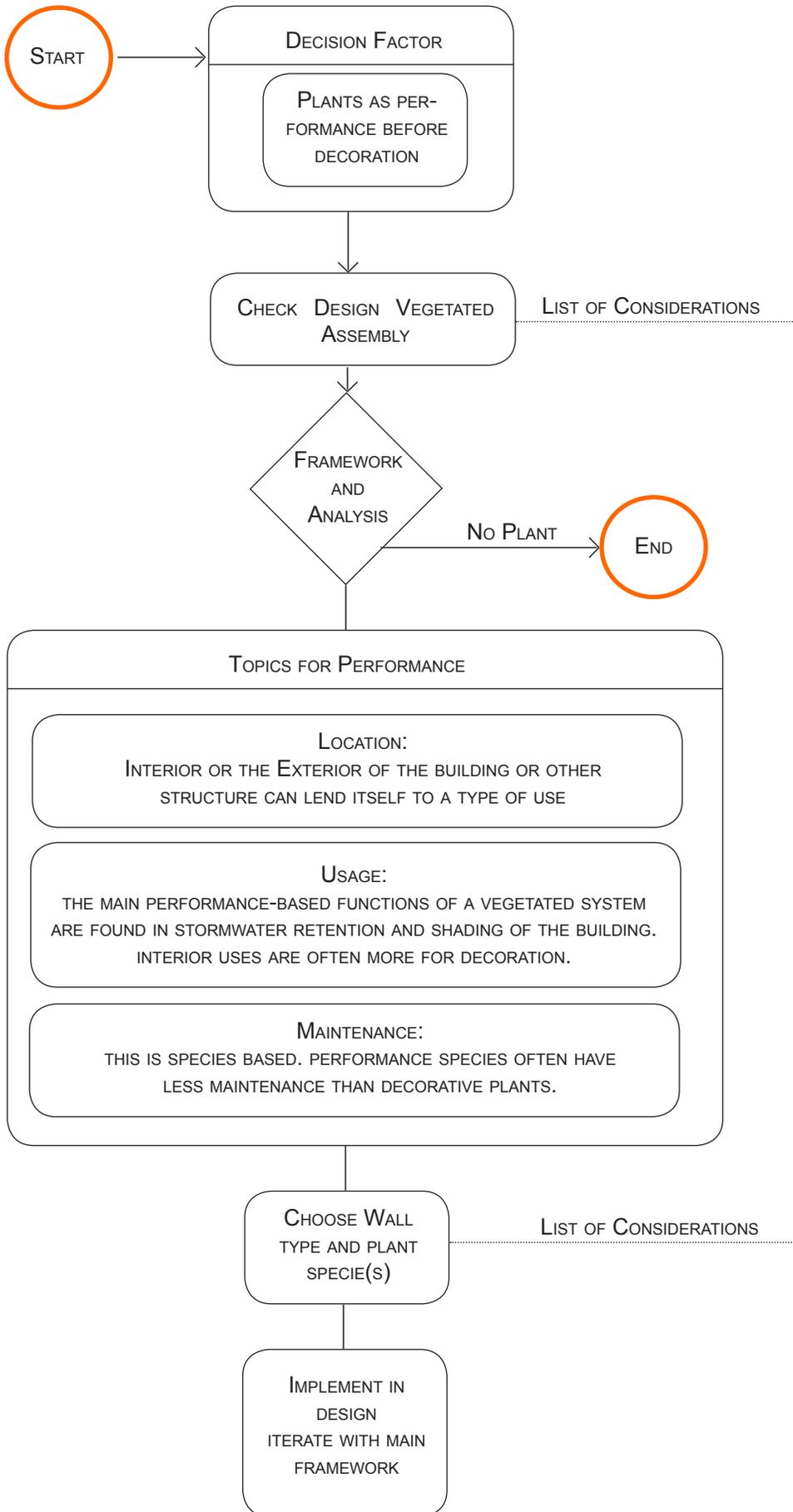
THIS CAN MAKE THE WALL A MORE ABOUT A SERIES OF LAYERS.

HOWEVER THE VEGETATED WALL NEEDS TO BE CONSIDERED AS A PART OF AN INTEGRATED BUILDING ENVELOPE. IF THE WALL IS CONSIDERED AND ADD-ON IF THE MONEY IS THERE, THEN THE WALL WILL NOT BE AS SUCCESSFUL.

THIS IS THE DIFFERENCE BETWEEN DECORATION AND DECORATIVE. DECORATION IS AN ADDITIVE ELEMENT AFTER THE FACT. DECORATIVE IS IN ITS INTENT TO BE INTEGRAL TO THE DESIGN, BUT IS NOT NECESSARILY STRUCTURAL.

IN ARCHITECTURE THIS IS CONSIDERED AS ORNAMENT. THIS CONCEPT OF MORE OR LESS ORNAMENT IS WHAT CONTRIBUTED TO ENTIRE MOVEMENTS OF ARCHITECTURE. THIS CAN LEAD INTO WHAT IS CALLED TECTONICS.

THESE TECTONICS ARE OFTEN CLEAR AND ORDERED, BEING CONSISTENT IN IDEA, AND ORGANIZATION. IN THIS SENSE, WHAT COULD BE THE ARCHITECTONICS OF THE VEGETATED WALL?



PERFORMANCE CRITERIA

MOVING FROM DECORATIVE AND TECTONICS (A22), THERE IS PERFORMANCE.

PERFORMANCE OFTEN HAS TO DO MUCH WITH THE PLACE OR THE SITE, CLIMATE AND MICRO-CLIMATES

SITE CAN CHANGE THE APPROPRIATE QUALITIES OF THE DESIGN IN TERMS OF BOTH HUMAN AND NON-HUMAN DESIGN FACTORS. FOR EXAMPLE ZONING REQUIREMENTS CAN BEGIN TO INFLUENCE DIFFERENT REQUIREMENTS FOR PERFORMANCE.

FOR EXAMPLE ZONING CAN INCLUDE OTHER CONSIDERATIONS OF VALUE SYSTEMS SUCH AS LEED.

PERFORMANCE IS NOT TIED TO THESE REQUIREMENTS, BUT INSTEAD SHOULD BE BEYOND THEM, TREATING THEM AS METRICS AND CRITERIA, BUT NOT DECIDING PROCESSES FOR DESIGN.

THESE QUESTIONS OF PERFORMANCE CAN BE BEGIN TO INFLUENCE TECTONICS AS A VERNACULAR OR AS LOCAL MATERIALS THAT BECOME A PART OF THE BUILDING ENVELOPE.

MORE PRAGMATIC QUESTION OF PERFORMANCE IS THE COST OF A VEGETATED WALLS. THIS OFTEN DRIVES THE PROJECT, HOWEVER THE LEVEL OF VEGETATED WALL CAN DRASTICALLY CHANGE THIS QUESTION.

THE POINT IS THAT PERFORMANCE SHOULD BE BALANCED WITH DECORATION AS MUCH AS POSSIBLE.

A FRAME OF MIND

PARTS USED IN THE FRAMEWORK DURING THE DESIGN PROCESS

SITE DESIGN PRE-DESIGN SCHEMATIC IDEATION CHARACTERISTIC COLLECTION CRITERIA REPRESENTATION ITERATION CHOOSING BY ADVANTAGES IMPLEMENTATION STUDIO METHOD

COLOR THEORY

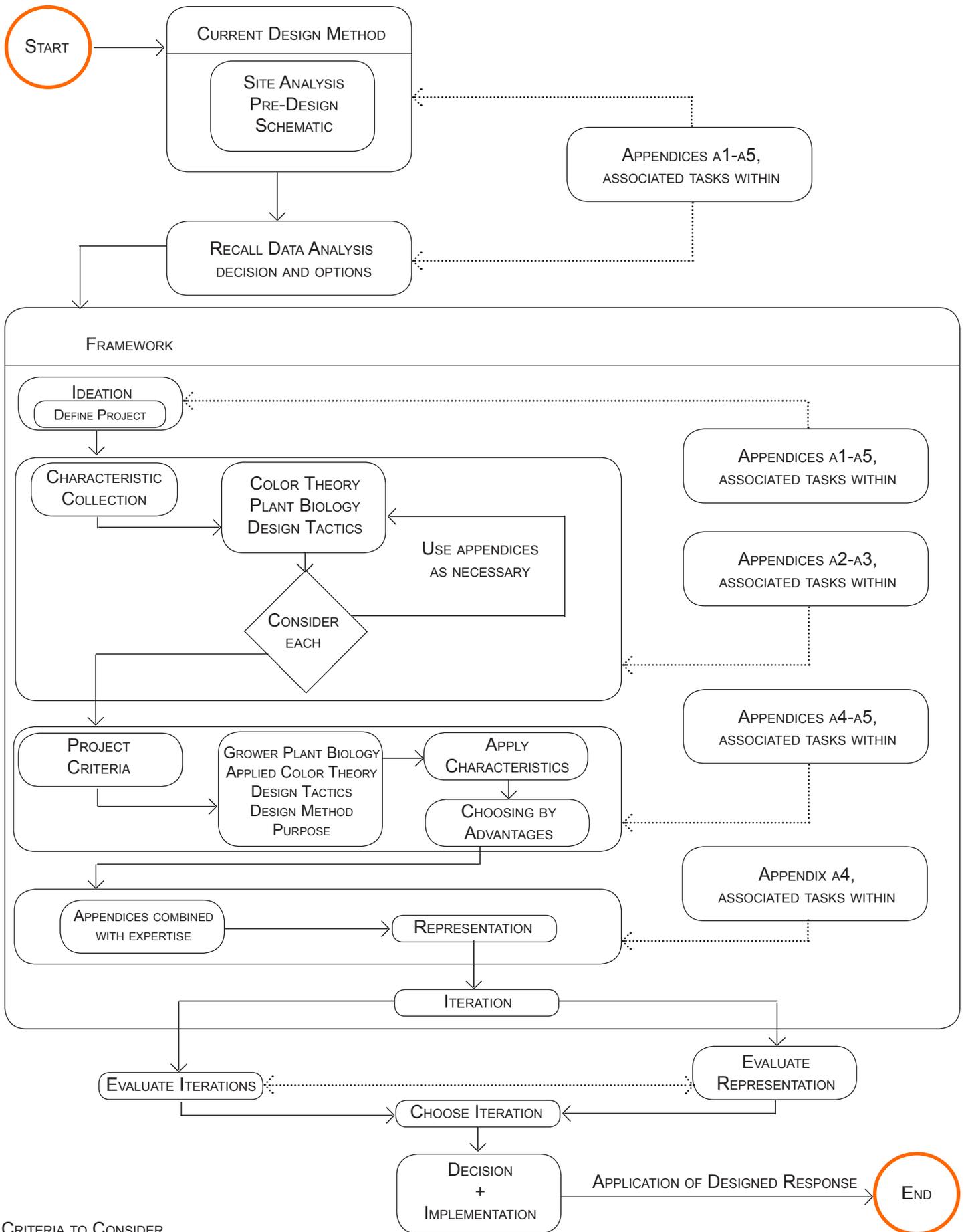
- HUE DECISION FACTORS
- COLOR MIXTURE AND COMPOSITION
- SATURATION
- VALUE
- GRAPHICS

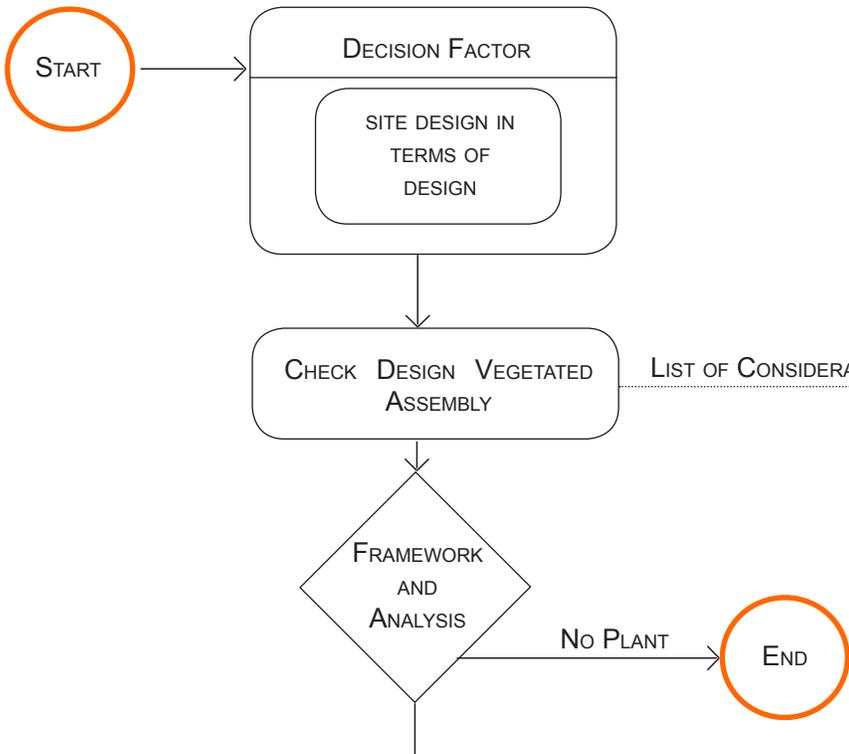
PLANT BIOLOGY

- PLANTS SPECIES
 - NATIVE OR NON-NATIVE SPECIES
- CLIMBING MECHANISM
 - ROYAL HORTICULTURE SOCIETY
- ANNUAL PLANT COLOR DIAGRAMS
 - MULTIPLE SPECIES COLOR DIAGRAM

DESIGN TACTICS

- HAND TECHNIQUES
- COMPUTER ASSISTED
- COMPUTER PROGRAMS
- REPRESENTATION IN ARCHITECTURE
- DESIGN CRITERIA AND PROMPT
 - MASONRY MATERIALS
 - OTHER MATERIALS
- DECORATION USE
- PERFORMANCE USE





SITE ANALYSIS CRITERIA

WHERE DOES THE SITE END?

THE SITE IS A COMBINATION OF A NUMBER OF FACTORS AND SHOULD NOT BE LIMITED BY THE PHYSICAL VIEWS OR CONSTRAINTS OF THE SITE.

THESE NON-PHYSICAL CONSIDERATIONS ARE PLACES THAT INSPIRATION CAN BE DRAWN FROM TO CREATE ORDER OR ORIENTATION WITHIN THE SITE WHILE MAINTAIN A REFERENCE TO A LARGER ARCHITECTURAL FABRIC.

CLIMATIC CONCERNS

THE SITE HAS LOCAL CONDITIONS THAT DESIGNS NEED TO RESPOND TO BE A MORE COMPLETE DESIGN.

CLIMATE AND WEATHER ALSO HELP TO DETERMINE WHICH SPECIES AND TYPES OF PLANTS THAT WOULD BE PICKED FOR VEGETATED ROOFS AND WALLS

THE DESIGNED RESPONSE

THESE TWO THINGS COMBINED MAKE THE DESIGNED RESPONSE.

THE DESIGNED RESPONSE REFLECTS THE PLACE THAT THE PROJECT WAS DESIGNED FOR RATHER THAN ATTEMPTING TO BE SOME UNIVERSAL ANSWER TO A VERY SPECIFIC PLACE.

THE DESIGNED RESPONSE IS REFLECTIVE OF THE ENVIRONMENT IN WHICH IT IS DESIGNED FOR AND SUBSEQUENTLY PLACED.

TOPICS FOR SITE ANALYSIS

PERFORMED WITH PRE-DESIGN

QUALITIES OF THE PHYSICAL SITE SHOULD ALWAYS BE DONE WITH RESEARCH WORK IN PRE-DESIGN AS EACH INFORMS THE OTHER

CONSIDER DESIGN CONSTRAINTS

USE THE PROMPT OR CLIENT DESIRES TO BEGIN LIMITING THE DESIGN, THIS CONTEXTUALIZES THE PROBLEM AND ALLOWS FOR IDEAS TO BE FOUND IN THE BOUNDARIES OF THESE CONDITIONS AND LIMITS

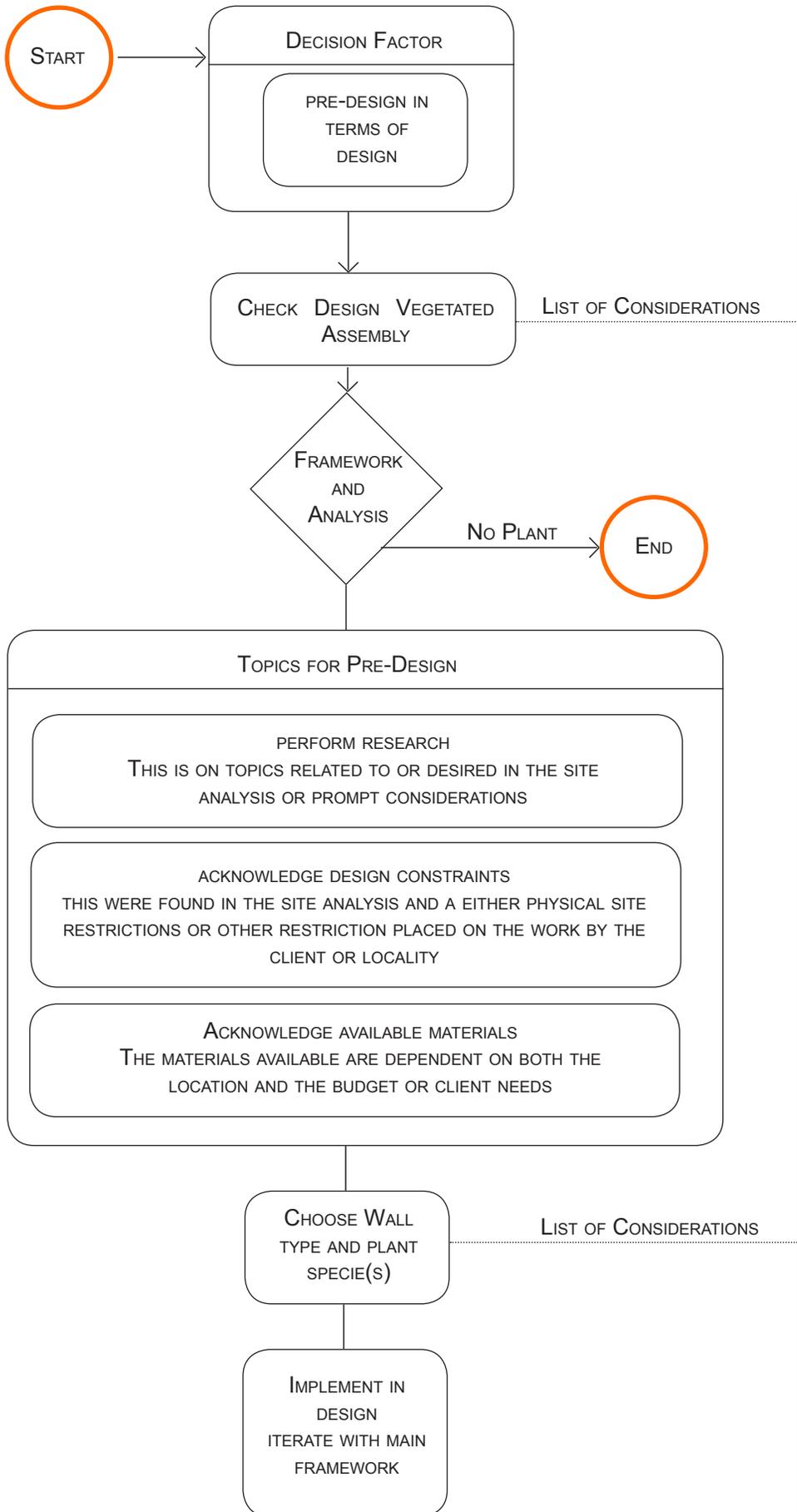
CONTEXT:

SURROUNDINGS, CLIMATE, TIME, HISTORICAL CONTEXT, AND OTHER TOPICS CAN BEGIN TO CONTEXTUALIZE THE SITE

CHOOSE WALL
TYPE AND PLANT
SPECIE(S)

LIST OF CONSIDERATIONS

IMPLEMENT IN
DESIGN
ITERATE WITH MAIN
FRAMEWORK



PRE-DESIGN CRITERIA

THIS IS THE TIME TO COLLECT ALL OF THE RELEVANT INFORMATION THAT YOU CAN FIND TO INFORM YOUR DESIGN AND THE PROCESS OF THE CURRENT WORK.

PERFORM RESEARCH, DETERMINE AND RESPECT DESIGN CONSTRAINTS, DETERMINE AND FIND AVAILABLE OF APPROPRIATE MATERIALS.

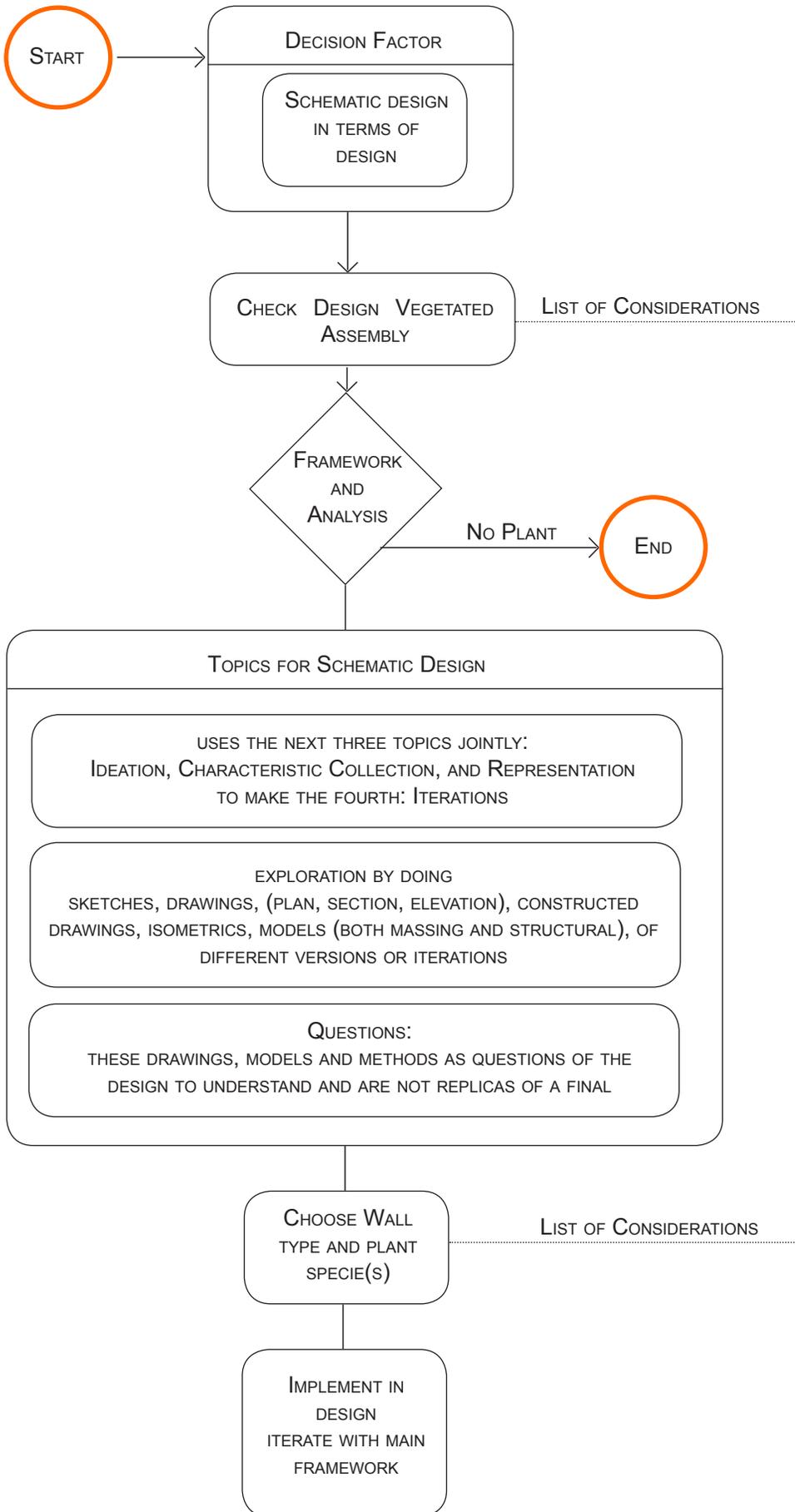
RESEARCH CAN BE DONE IN DESIGN PRACTICES, ARCHITECTURAL TYPOLOGIES, SPECIFIC ARCHITECTS THAT INFLUENCE YOUR WORK, BUILDING SYSTEMS TO INCLUDE.

CONSTRAINTS COME FROM A COMBINATION OF THE PROMPTS OR CLIENT DESIRES AS WELL AS CONSTRAINTS OR IDEAS OR INTERESTS YOU BRING TO THE PROJECT AS WELL. THE PROMPT MAY ASK FOR YOU TO DESIGN A SPACE, BUT HOW AND WHAT AND WHY DO YOU MAKE THAT DESIGNED RESPONSE UNIQUE?

MATERIALS ARE OFTEN AN APPROPRIATE WAY TO BRING CONSTRAINTS TO THE PHYSICAL SPACE AND BRING CERTAIN MEANINGS WITH THEM AS A PART OF THEIR TRADITIONAL USAGE. SOME GOOD ONES TO START WITH ARE CONCRETE, WOOD, AND METAL

SOME INTERESTING ARCHITECTS:

ALVAR AALTO, CALATRAVA, GLEN MURCUTT, CORBUISER, WALTER GROPIUS, MIES VAN DER ROHE, DANIEL LIBESKIND, RICHARD MEIER, NORMAN FOSTER, RENZO PIANO, LUIS BARRAGAN, LEGORETTA, FRANK LLOYD WRIGHT, LOUIS SULLIVAN, BUCKMINSTER FULLER, AND JOSEF ALBERS



SCHEMATIC DESIGN CRITERIA

SCHEMATIC DESIGN IS THE METHOD OF TAKING INFORMATION AND BEGINNING TO MAKE A DESIGNED RESPONSE TO THE SITE ANALYSIS AND PRE-DESIGN INFORMATION GATHERING.

THIS MEANS SYNTHESIZING INFORMATION AND USING EXPERIENCE, OR INTUITION, ALONG WITH REFERENCES TO MAKE AN ARCHITECTURAL INTERVENTION INTO A SITE.

THIS PROCESS OF SCHEMATIC DESIGN USES FOUR MAJOR TECHNIQUES TO MAINTAIN A SYSTEMATIC APPROACH TO EXPLORING AND UNDERSTANDING A PERSONAL INTERACTION WITH ARCHITECTURE

DIAGRAMMING

IS OFTEN TRANSLATING IDEAS INTO SIMPLE REPRESENTATIONS ON PAPER. THESE CAN BE REFINED OR NOT, BUT ARE USED TO GET AN IDEA OUT AND BEGIN TO ENGAGE IT ON PAPER

SKETCHING

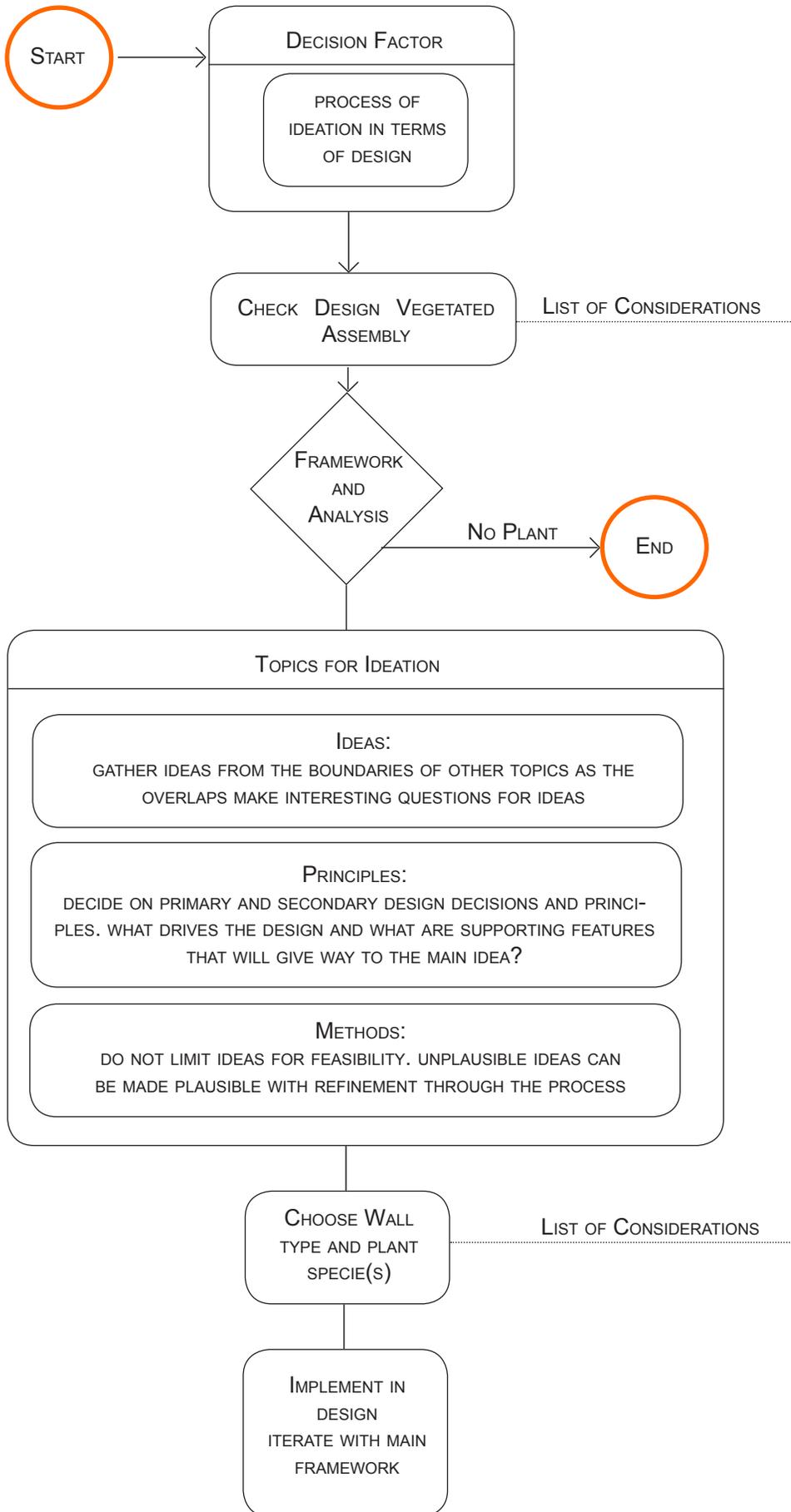
IS NOT ABOUT LITERALLY RECORDING WHAT IS PRESENT ON A SITE OR THOUGHT, BUT IS ABOUT CAPTURING THE ESSENCE OF WHAT AN IDEA IS IN A MORE DETAILED MANNER THAN A DIAGRAM. THESE ARE OFTEN DONE IN A SKETCHBOOK

DRAWING

IS HOW WE AS STUDENTS OF ARCHITECTURE WORK THROUGH MORE AND MORE LAYER OF COMPLEXITY. DRAWINGS ARE A SET OF STANDARD TYPES THAT HELP OTHERS TO UNDERSTAND OUR IDEAS AT CERTAIN SCALES.

MODELING

IS DONE CONCURRENTLY WITH ALL OF THE OTHER TYPES OF 2 DIMENSIONAL REPRESENTATION AND ARE USED TO EXPLORE QUESTIONS THAT ARE NOT PRESENT IN DRAWINGS



IDEATION DESIGN CRITERIA

IDEAS CAN COME FROM A VARIETY OF SOURCES; HOWEVER I HAVE FOUND THAT IDEAS ARE OFTEN ROOTED IN PAST EXPERIENCES.

THESE PAST EXPERIENCES REVEAL TOPICS THAT WE HAVE BEEN INTERESTED IN BEFORE, BUT THEN NEW OR INTRIGUING IDEAS CAN COME FROM THE INTERSECTION OF DIFFERENT TOPICS.

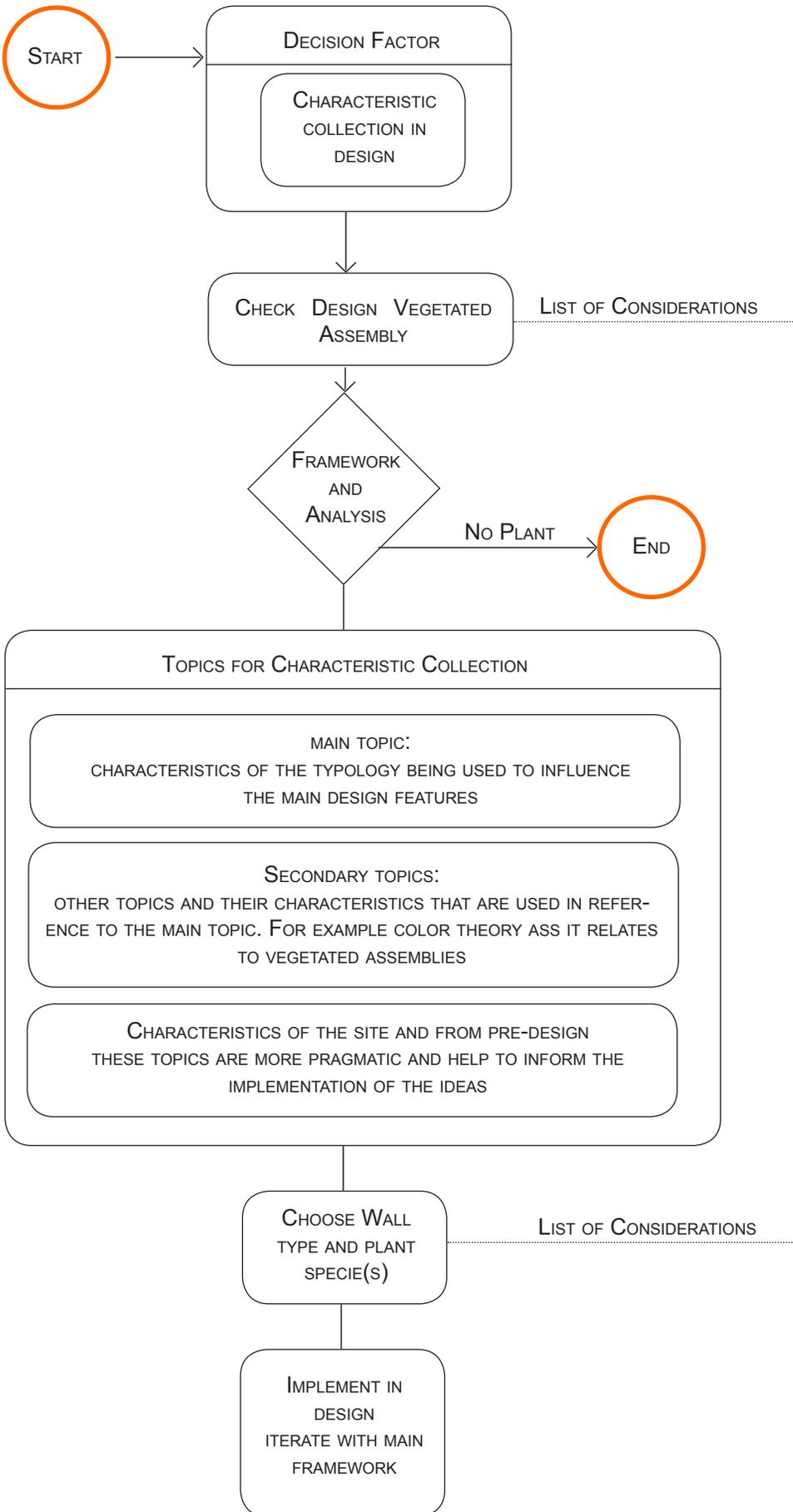
WE USE THESE EXPERIENCES, BOTH PHYSICAL AND METAPHYSICAL TO UNDERSTAND THE WORLD AROUND US.

THIS IS WHY VISITING YOUR SITE, OR TALKING TO CLIENTS AND OTHERS WHO ARE FAMILIAR WITH SIMILAR WORK IS CRITICAL TO THE DESIGN PROCESS. GATHERING INSPIRATION FROM MULTIPLE SOURCES: INTERNET, OTHER PEOPLE WITH VEGETATED WALL ASSEMBLIES, BUILDINGS WITH VEGETATED WALLS

THESE PAST EXPERIENCES WILL REVEAL THE PRINCIPLES THAT ARE USED TO ORGANIZE AND PROVIDE GUIDANCE FOR PROJECTS. THESE EXPERIENCES ARE ROOTED IN INTERESTS OR OTHER THAT ARE THEN APPLIED LINES OF INQUIRY TO THE LARGER PROFESSION

PERSONALLY THIS TRANSLATED TO VEGETATED ARCHITECTURE AS I HAVE ALWAYS FOUND PLANTS AND NATURE AS AN INTERESTING PART OF OUR LIVES. THEN COLOR THEORY WAS USED TO ORGANIZE THE INQUIRY INTO THESE PLANTS.

THESE THEN ARE APPLIED TO AN AREA OF ARCHITECTURE: THE BUILDING ENVELOPE AND HOW THESE INTERACT WITH OUR EXPERIENCE OF ARCHITECTURE, RESULTING IN THE STUDY OF VEGETATED ASSEMBLIES SUCH AS GREEN WALLS AND ROOFS



CHARACTERISTIC COLLECTION CRITERIA

THIS COLLECTION OF CHARACTERISTICS WAS HINTED AT IN PREVIOUS SECTIONS, AND STARTS WITH UNDERSTANDING A HIERARCHY OF TOPICS OR IDEAS AND HOW THEY RESPOND TO THE SITE CONDITIONS AND INTENT.

MAIN TOPIC
 TYPOLOGIES OR GENERAL TOPICS OR CONSIDERATIONS OF ARCHITECTURE:

TYPOLOGY EXAMPLES
 LIBRARY, SCHOOL, MUSEUM, ETC

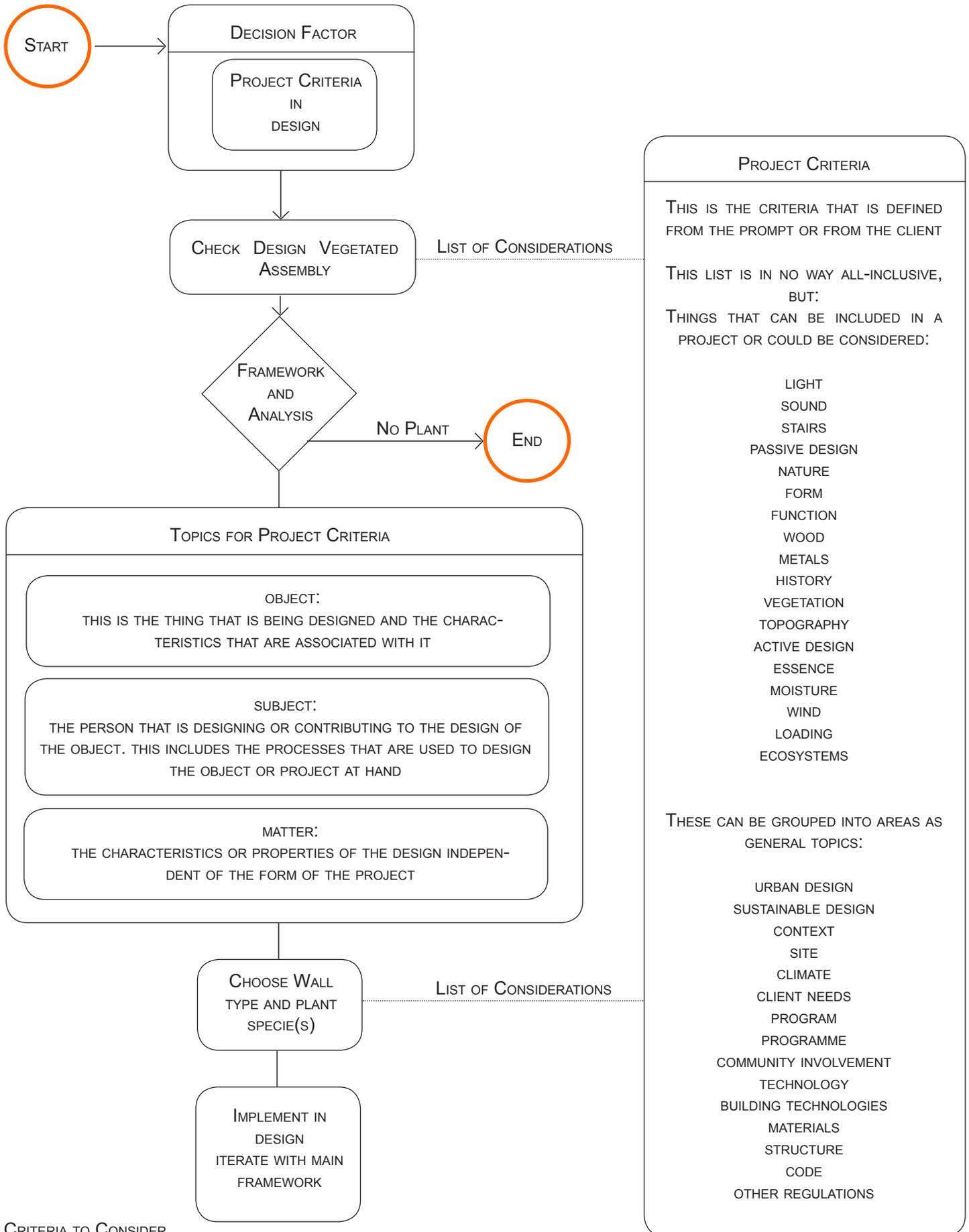
GENERAL TOPICS
 LIGHT, STRUCTURE, ENVIRONMENT, RITUAL, MOVEMENT, THRESHOLD, NATURE (PLANTS), ETC

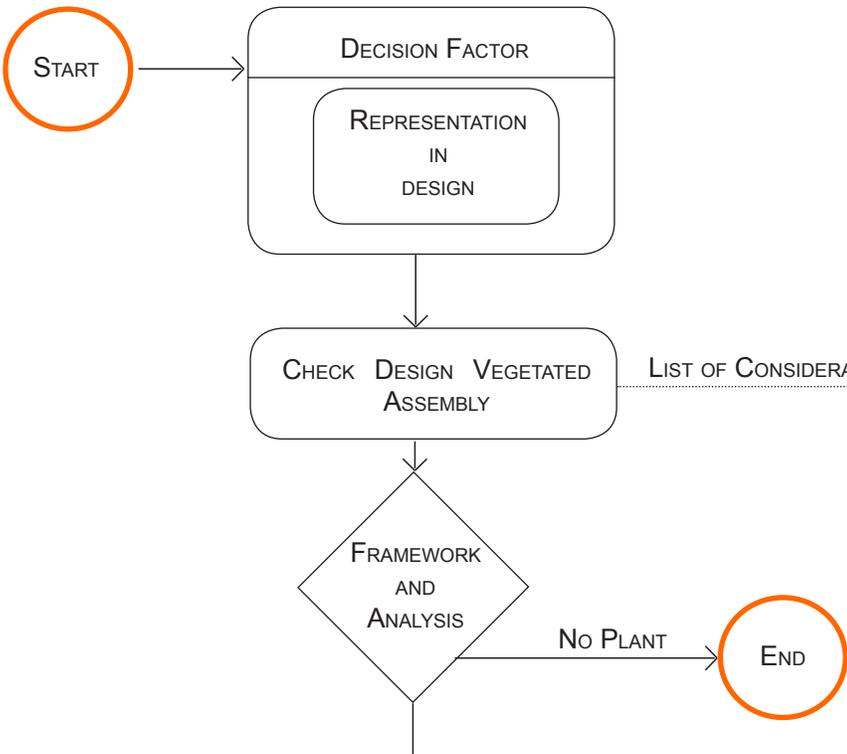
SECONDARY TOPICS
 IDEAS OR TOPICS THAT INFLUENCE, INFORM, OR LIMIT THE MAIN TOPIC BUT DO NOT SUPERSEDE IT AS DESIGNED RESULTS ARE IN REFERENCE TO THE MAIN TOPIC. THESE TOPICS ARE OFTEN SUB-AREAS OF LARGER TOPICS, FOR EXAMPLE COLOR THEORY AS A PART OF COLOR OR GRAPHICS.

DESIGNED RESPONSE
 USING THE SITE AND THE MAIN TOPICS TO INFORM EACH OTHER.

THIS MAKES THE DESIGN OF A PLACE AND IN ITS PLACE, RATHER THAN DESIGNED FROM A FAR.

HAVING THE SITE AND THE CONDITIONS SUCH AS CLIMATE THEN TO HELP FURTHER DEFINE THE TYPOLOGY OR MAIN QUALITIES THAT ARE PRESENT IN THE DESIGNED RESPONSE.





REPRESENTATION CRITERIA

THIS IS NOT AN EXHAUSTIVE LIST OF WHAT TO CONSIDER IN REPRESENTATION:

DIFFERENT LEVELS OF REPRESENTATION AND REFINEMENT:
DIAGRAMMING, DRAWING

VIEWS: EYE-LEVEL, ARIEL, WORM'S-EYE, DISTORTION, VIEW FRAMING, VIGNETTES, VIEW OR DRAWING COMBINATIONS, COMPOSITES AND SIMULTANEOUS VIEWS

MODELING: MASSING, CONTEXTUAL, LIGHT, ATMOSPHERIC, CONTRAST

EDITING
UNDERSTANDING NEGATIVE SPACE, SELECTION, TRANSPARENCY, SKELETON PROJECTIONS, DISASSEMBLIES, AND EXPLODAMETRICS

DIAGRAMMING IS USED TO EXPLAIN ABSTRACTION, SYMBOLS, RELATIONSHIPS, CLASSIFICATIONS, HIERARCHY, DYNAMICS OR MOVEMENT, TRANSFORMATIONS AND PROCESSES

THE FRAMEWORK IS AN EXAMPLE OF AN EXTENSIVE PROCESS DIAGRAMMING

COMPUTER
ANALOG AND DIGITAL TECHNIQUES AND PROGRAMS HAVE DIFFERENT USES AND NEEDS

COMPOSITION
LOOK AT COMPETITIONS AND OTHER METHODS TO SEE HOW TO COMPOSE BOARDS AND OTHER MULTI-USE DRAWINGS

TOPICS FOR REPRESENTATION

METHODS:
CONVENTIONAL DRAWINGS, VIEW SELECTION, MODELING, EDITING, DIAGRAMMING, MEDIA MANIPULATION

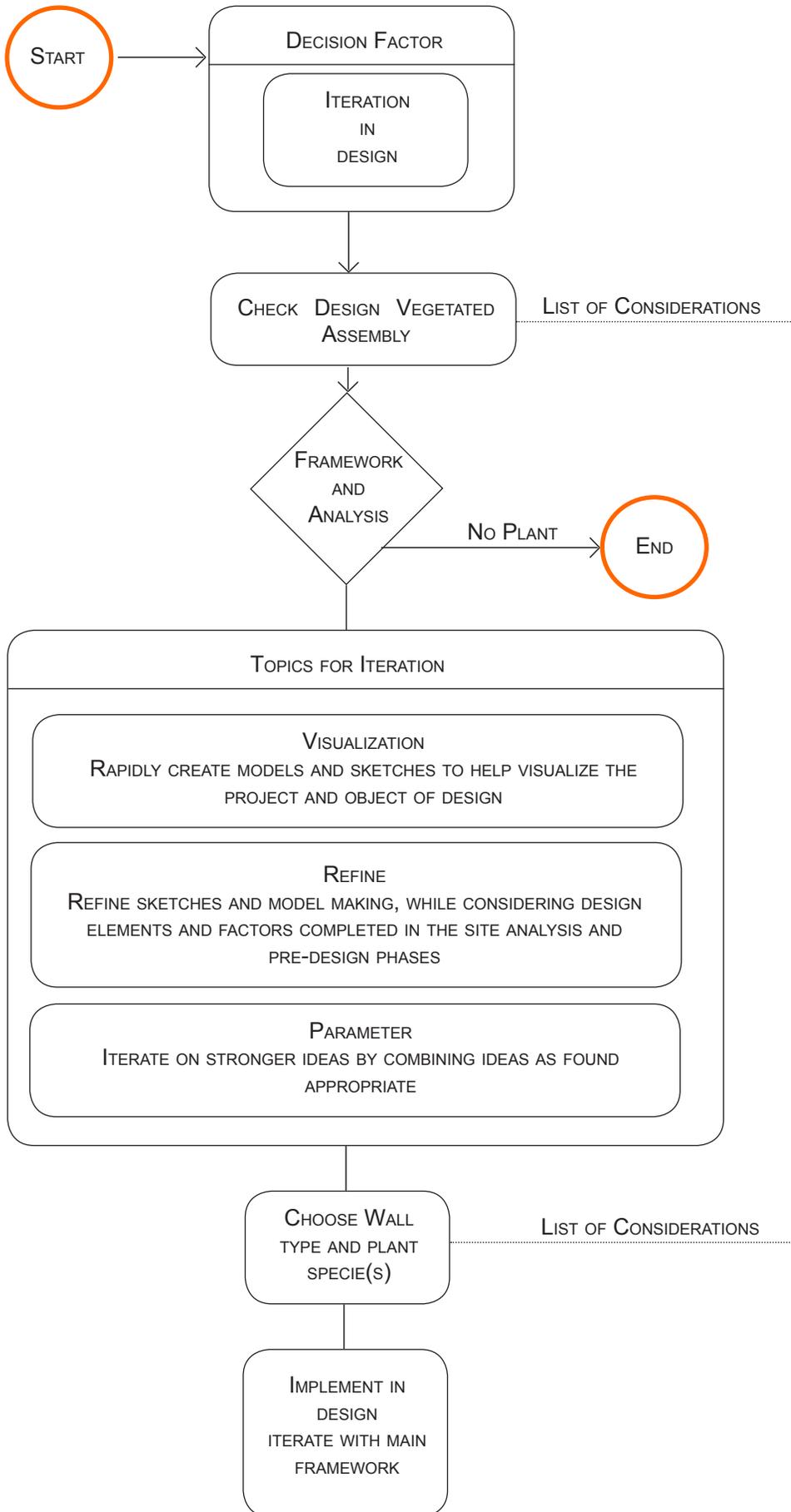
CONTEXT:
REPRESENTATION IS DIFFERENT IN DIFFERENT PERIODS OF TIME AND IS THE RESULT OF OUR PAST EXPERIENCES AND OUR STEPS TOWARD MASTERY OF TECHNIQUE

IN DESIGN:
THIS IS THE PROCESS OF SEEING, THINKING, COMMUNICATION, OF DIMENSIONS, AND EXPLORATIONS

CHOOSE WALL TYPE AND PLANT SPECIE(S)

LIST OF CONSIDERATIONS

IMPLEMENT IN DESIGN
ITERATE WITH MAIN FRAMEWORK



ITERATION CRITERIA

ITERATIONS ARE VARIANTS OF IDEAS THAT CAN BE BASED ON SIMILAR IDEAS, BUT HAVE DIFFERENT METHODS OF EXPRESSION. NOT ALL BUILDING, CARS, EVEN PENS, LOOK THE SAME. FURTHER, NOT ALL OF THE DESIGNED OBJECTS IN OUR WORLD ARE MADE WITH SOME SORT OF REVISION OR ALTERATIONS.

THESE SYSTEMATIC CHANGES TO A DESIGN IN RESPONSE TO DIFFERENT CRITERIA MAKE OUR SERIES OF ITERATIONS.

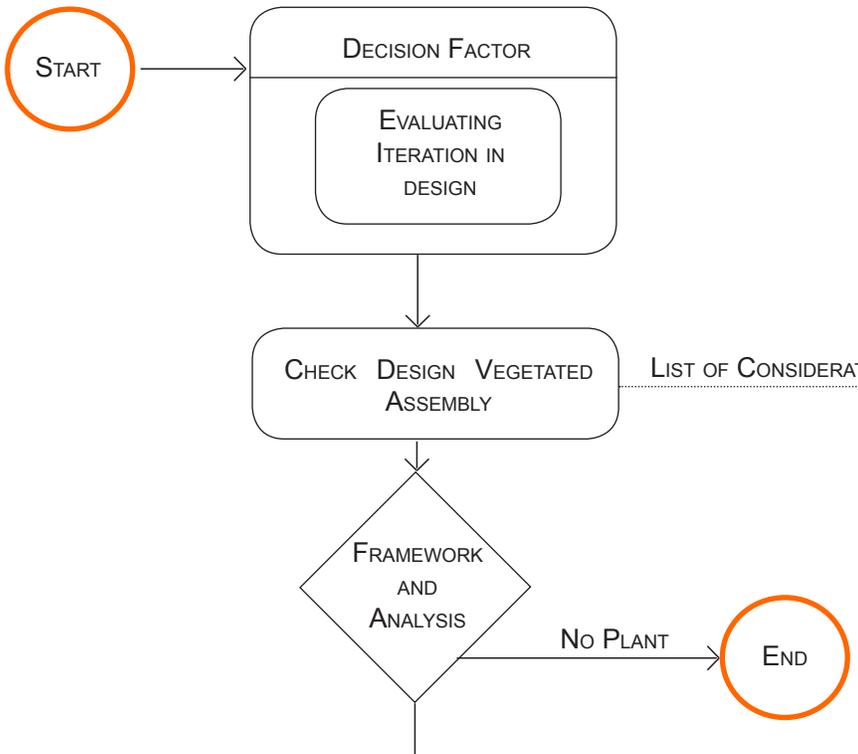
THE PROCESS OF ITERATING IS CRITICAL TO THE DESIGN PROCESS.

THIS MEANS THAT A DESIGN IS NOT OPTIMIZED AS A FINAL SOLUTION. FOR THAT MATTER DESIGN IS NOT A PROBLEM TO BE SOLVED, BUT RATHER A PROCESS TO BE EXPLORED.

ITERATING IS A CYCLICAL PROCESS THAT HELPS DESIGNS TO NOT ONLY DISCOVER, BUT THEN REFINE AND THEN UNDERSTAND WHAT IS IMPORTANT IN A DESIGN, HOW IT CAN BE IMPROVED, OR HOW IDEAS CAN BE COMBINED OR ALTERED AS DESIRED.

THIS REQUIRES THAT WE VISUALIZE SOMETHING, A DESIGNED RESPONSE IN OUR MIND, BRINGING TOGETHER INFORMATION FROM A NUMBER OF SOURCES TOGETHER. THEN, WITH THIS INFORMATION YOU BEGIN TO REPRESENT THESE IDEAS TO OTHERS.

THIS REQUIRES THAT WE HAVE SOME METHOD FOR MAKING DECISIONS ABOUT OUR DESIGNS. THIS CAN BE DONE USING THE PRE-DESIGN IDEAS, DESIRED CHARACTERISTICS, PROJECT CRITERIA, OR OTHER BROADER METHODS SUCH AS CHOOSING BY ADVANTAGES.



EVALUATION CRITERIA

THE PROCESS OF EVALUATION IS BASED IN CREATING THE DESIGNED RESPONSE

DEPENDING ON WHAT SORT OF IDEAS YOU HAVE AND WHAT SITE AND CONTEXT OR CLIMATE YOU HAVE, CERTAIN DESIGNS ARE MORE APPROPRIATE. THIS IS WHAT MAKES A DESIGNED RESPONSE MORE COMPELLING THAN A DISTANCED AND UN-INFORMED DESIGN.

SINCE IT WOULD BE NEARLY IMPOSSIBLE TO DETERMINE WHAT TO EVALUATE BY, HERE IS AN EXAMPLE:

PEN AND THE PENCIL:

PEN: INK, PERMANENT LINE AND DARK COLOR

PENCIL: GRAPHITE, NON-PERMANENT LINE AND , GREY COLOR

DEPENDING ON THE NEEDS OF THE SITUATION, A POSITIVE ATTRIBUTE MIGHT BE LESS HELPFUL LATER.

PERMANENT INK MIGHT BE A PROBLEM IF I NEED TO ERASE, BUT I MIGHT ENJOY TO PERMANENT NATURE OF THE INK IN HOW IT HELPS ME DESIGN.

PENS DO NOT WORK IN SPACE WITHOUT SOME KIND OF PRESSURIZATION. PENCILS CAN BE USED IN SPACE, HOWEVER THE GRAPHITE CAN CAUSE FIRES IN HIGH OXYGEN ENVIRONMENTS.

THE COLORS OF LINES VARY BY TYPE OF INK AND GRAPHITE TYPE, SO IT IS UP TO PREFERENCE AND NEED.

THE SITUATION OR CONTEXT HELPS TO DETERMINE THE BETTER COURSE OF DESIGN EACH TIME. USING THE SAME DESIGN FOR EVERY SITUATION CAN CAUSE ISSUES.

TOPICS FOR EVALUATING ITERATIONS

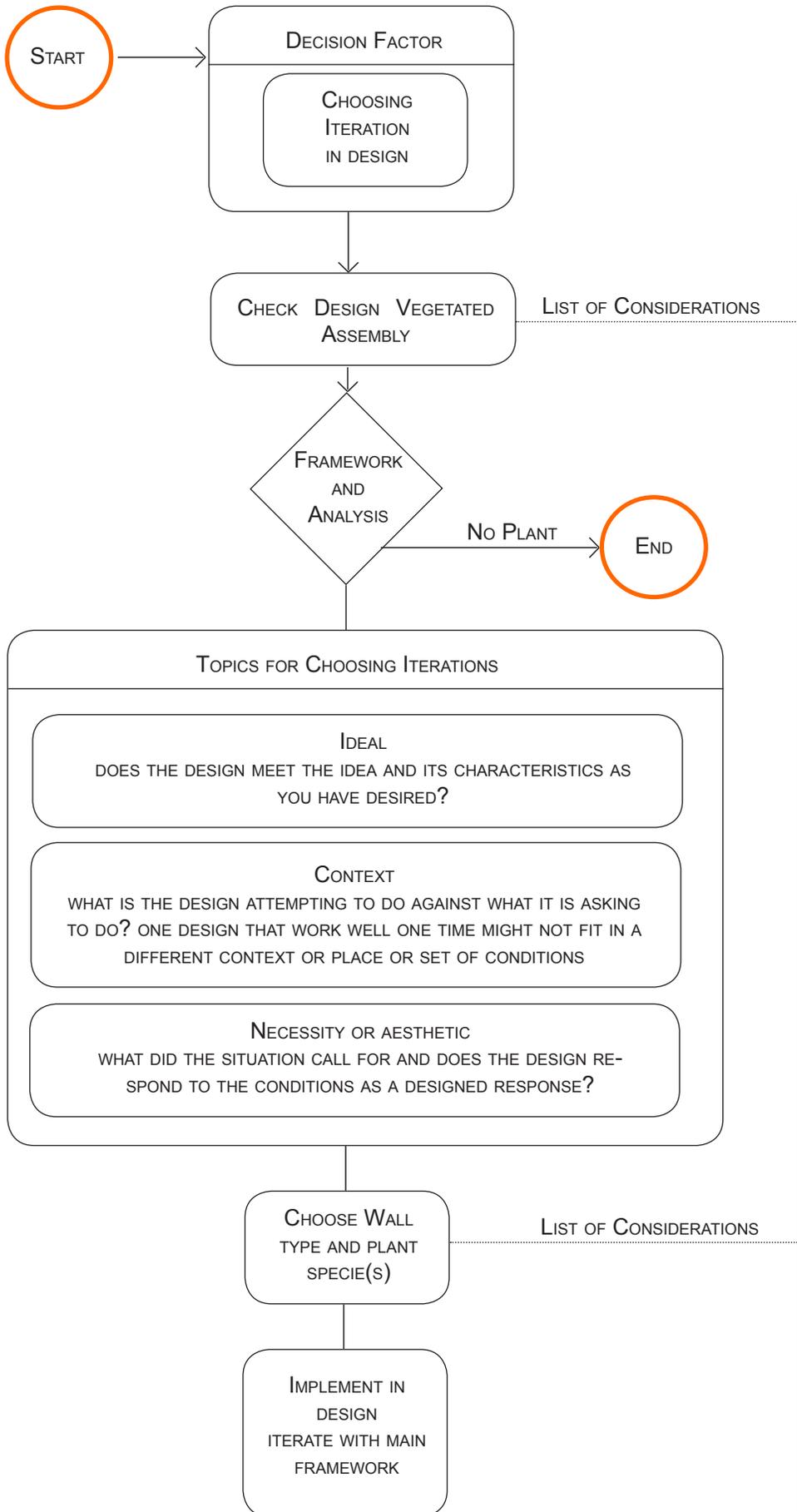
ITERATIONS AND CRITERIA
REVIEW THE ITERATIONS FOR EACH ABILITY TO MEET THE NEEDS OF THE IDEA AND OF THE PROMPT

DECISION:
DECIDE ON STRONGER ITERATIONS VS. WEAKER ONES, GATHER NEEDED FEEDBACK FROM THE PARTIES INVOLVED OR FROM THE IDEA THAT IS INFORMING THE PROJECT

METHOD:
CHOOSING BY ADVANTAGES IS A QUALITATIVE ASSESSMENT METHOD FOR ITERATIONS USING CONTEXT OF THE OBJECT

CHOOSE WALL TYPE AND PLANT SPECIE(S)

IMPLEMENT IN DESIGN
ITERATE WITH MAIN FRAMEWORK



CHOOSING ITERATION CRITERIA

NOW THAT THE EVALUATION CRITERIA ARE CHOSEN, NOW ITERATIONS CAN BE REDUCED OR COMBINED TO MEET OUR IDEAS, CONTEXT AND NECESSITY FOR THE DESIGNED RESPONSE

THESE THREE THINGS HAVE A CERTAIN HIERARCHY THAT CAN HELP TO CHOOSE USEFUL OR APPROPRIATE ITERATIONS.

THE IDEAL IS THE FIRST LAYER. DOES THE IDEA OR THE DESIGN MEET THE CONSIDERATIONS AS YOU AND THE PROMPT OR PROJECT WERE DEFINED?

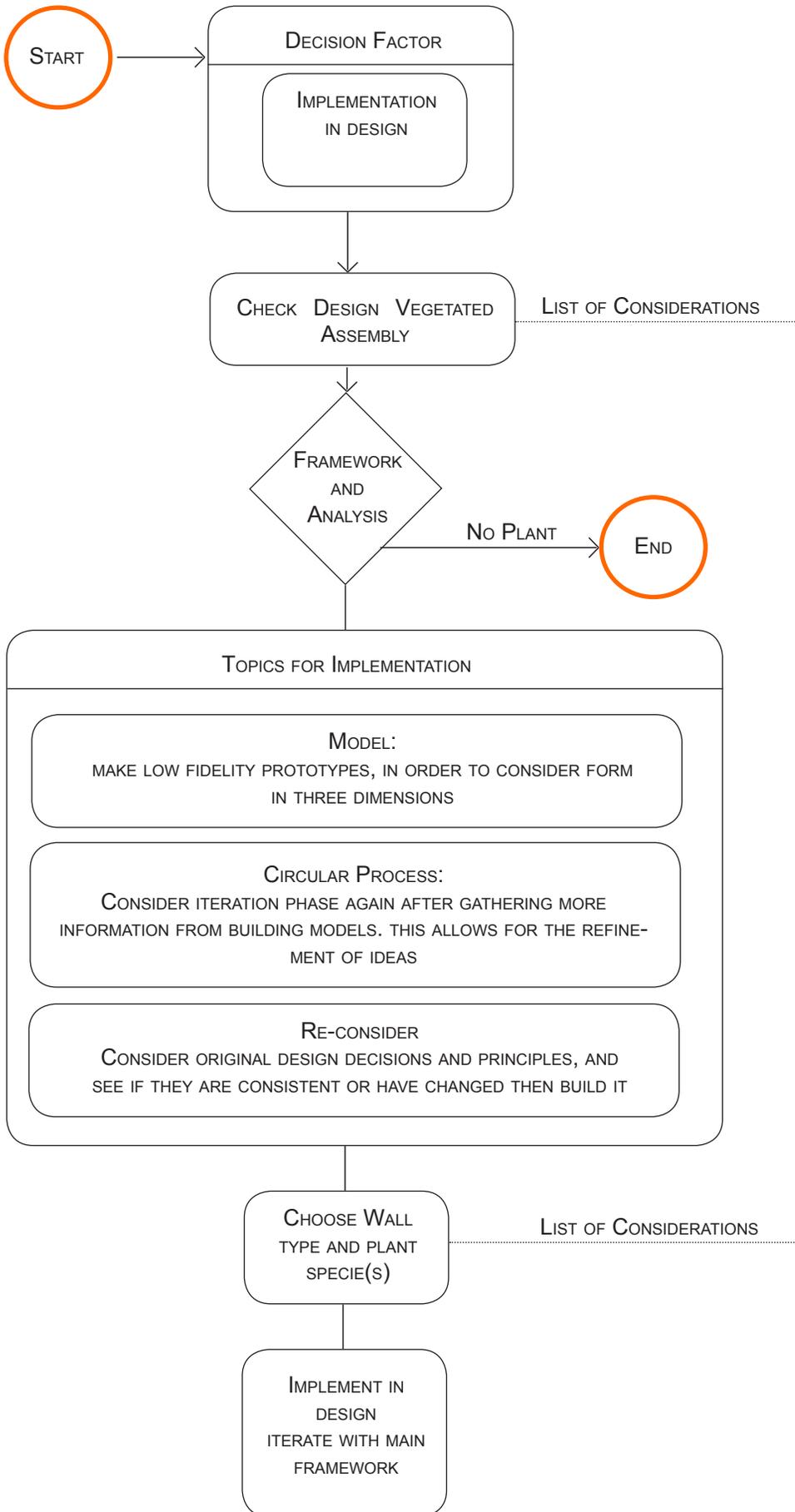
IF ITERATION MEET THE IDEAS OR CONCEPTS YOU HAVE CHOSEN AS THE DESIGNER:

THESE IDEAS BEGIN TO BE REFINED OR REMOVED BASED ON THE CONTEXT AND CONDITIONS OF THE SITE. THIS DOES NOT MEAN LOOKING FOR NEGATIVES, BUT RATHER DISCOVERING WHAT WORKS, OR WHAT CAN BE CHANGED TO PERFORM OR RESPOND BETTER

THIS IS WHERE CHOOSING BY ADVANTAGES BECOMES USEFUL IN UNDERSTANDING WHAT IS POSITIVE IN EACH, AS DEPENDING ON THE CONTEXT A ITERATION MAY BE MORE OR LESS APPROPRIATE AT A TIME.

IF AFTER CONTEXT OF THE SITE MULTIPLE ITERATION EXIST, THE NECESSITY OF THE DESIGNS CAN BE REVIEWED. BASICALLY, IT MIGHT BE MEETING STANDARDS OR REQUIREMENTS, BUT IS THE PROJECT GOING BEYOND THE MINIMUM AND IS IT AESTHETICALLY PLEASING?

WHILE THERE IS A HIERARCHY OR ORDER OF CONSIDERING EACH ITERATIONS, IT IS THE BALANCE OF ALL OF THESE THAT ALLOW AN ITERATION TO BE CHOSEN FOR FURTHER REFINEMENT AND REVIEW.



IMPLEMENTATION CRITERIA

IMPLEMENTATION IS NOT MINDLESSLY PRODUCING DRAWINGS OR OTHER REPRESENTATIONS. THE IDEAS ARE STILL BEING REVIEWED AND REFINED

TOPICS OF THE PROJECT ARE BUILDING ON EACH OTHER DURING THE WHOLE PROCESS, WHILE STILL LOOKING FOR HOW AN IDEA CAN BEGIN TO TAKE FORM.

WHILE DRAWING IS CRITICAL TO THE REPRESENTATION AND DESIGN PROCESS, THEY NEED THE THIRD DIMENSION, THUS MODELING.

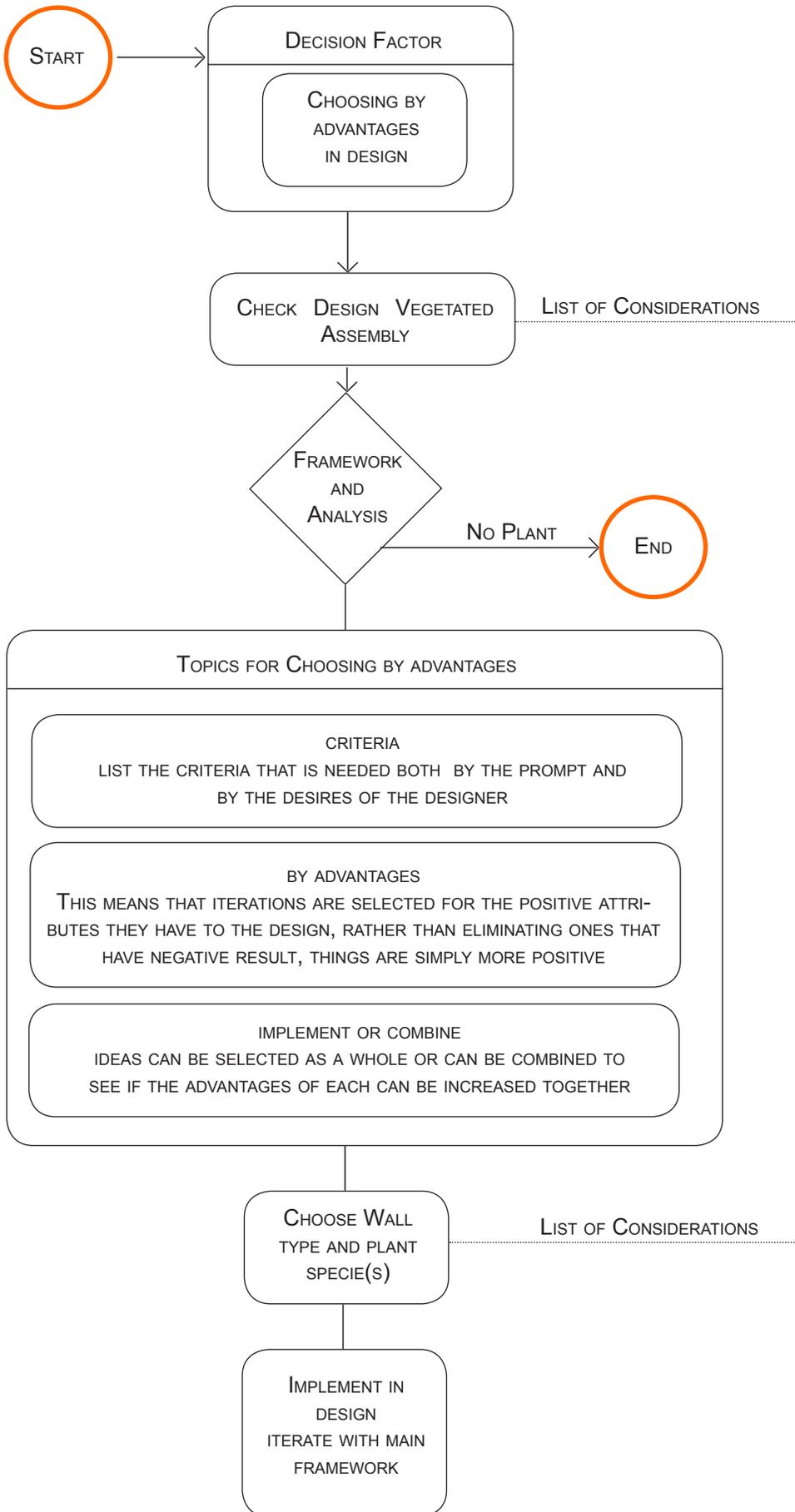
THESE MODELS ASK A QUESTION OF THE PROJECT AND ARE NOT MADE TO SIMPLY PRESENT CONDITIONS. THESE MODELS LOOK AT CONNECTIONS AND VOLUME OF SPACE TO GAIN GREATER UNDERSTANDING OF A DESIGN

THIS PROCESS USES THE INTERACTION OF DRAWING AND MODELING AND HOW EACH INFORMED THE OTHER TO BEGIN TO FIND AREAS FOR IMPROVEMENT.

OVER TIME, THESE DIFFERENT MODELS AND DRAWINGS BECOME MORE REFINED AS EACH ARE INFORMED BY THE OTHER WHEN LOOKING AT A SINGLE ITERATION

AFTER RE-CONSIDERING THE DESIGN INDIVIDUALLY, PEER REVIEW AND CLIENT REVIEW ARE SUED TO DEFINE AND REFINED THE DESIGNED RESPONSE AND REPRESENTATIONS

FROM THESE CRITIQUES, ONCE A PROJECT IS COMPLETE OR IT IS TIME TO PRESENT, MODELS AND REPRESENTATIONS ARE MADE OF THE REFINED AND IMPLEMENTED ITERATION.



CHOOSING BY ADVANTAGES

THIS PROCESS ALLOWS THE DESIGNER TO REVISIT OR REVIEW ITERATIONS BY COMBINING POSITIVE ATTRIBUTES OR CHARACTERISTICS AND MAKE A FUNDAMENTALLY NEW ITERATION FOR REVIEW IN THE DESIGN PROCESS

THE ITERATIONS ARE REVIEWED AS THE SUM OF THEIR PARTS NOT AS INDIVIDUAL CHARACTERISTICS ISOLATED FROM THE ITERATION.

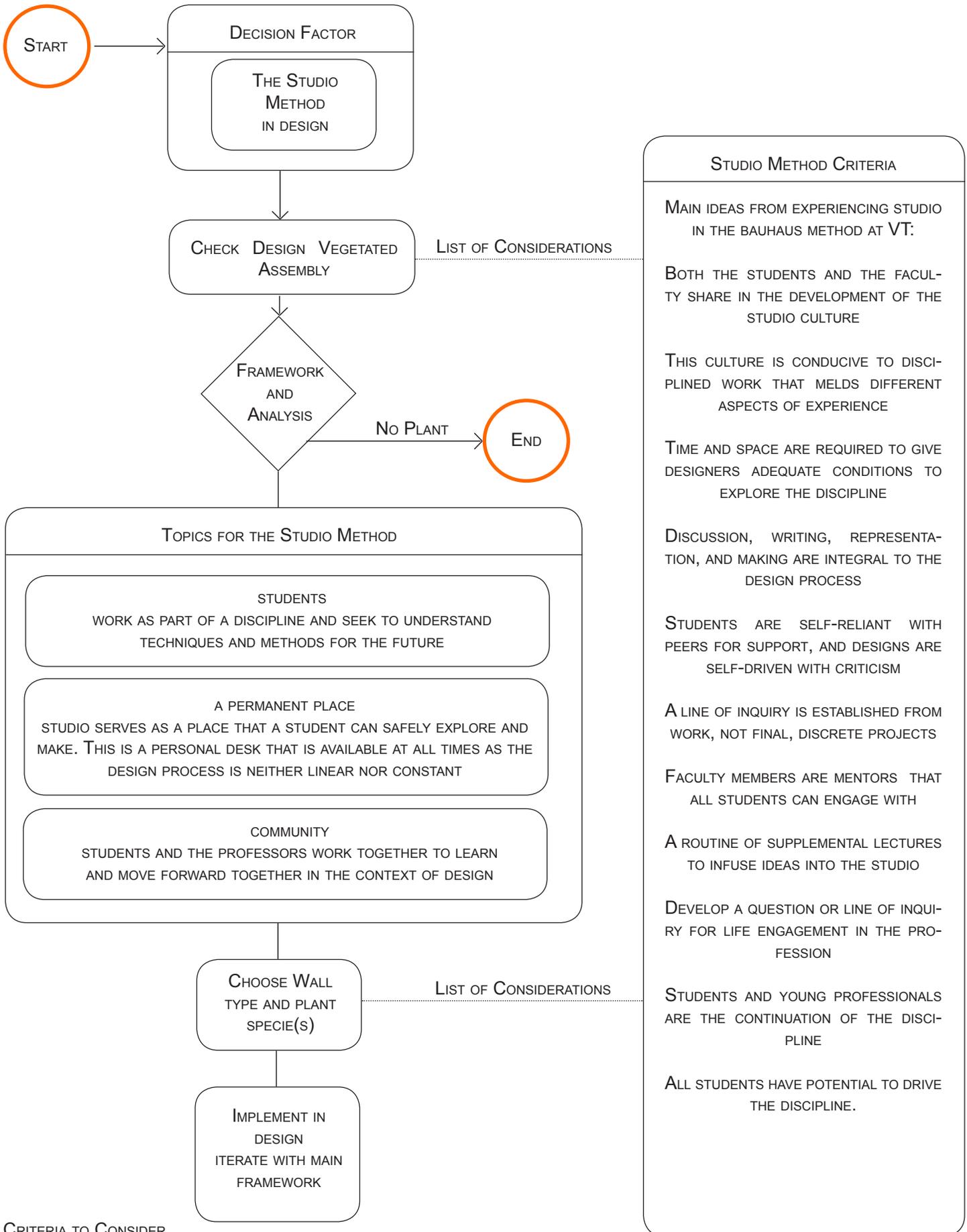
INDIVIDUAL CHARACTERISTICS ARE REVIEWED AND SELECTED BASED ON THE SITE AND OTHER CONTEXTS SO THAT THEY ARE BASED IN REFERENCE RATHER THAN INDIVIDUAL PERFORMANCE

THIS MUST BE GROUNDED IN RELEVANT AND USEFUL OR PURPOSEFUL FACTS AND REFERENCE ON THE BASIS OF RELATIVE DEGREES OF POSITIVENESS, RATHER THAN ONE BEING A NEGATIVE TO OTHERS.

THE REFERENCE OF RELEVANT CHARACTERISTICS OR FACTORS IN DESIGN MAKES SURE THAT LARGE ABSTRACTIONS ARE NOT INHERENTLY SELECTED OVER MORE PRAGMATIC SOLUTIONS.

THIS IS WHY IT IS IMPORTANT TO INCLUDE NOT ONLY THE INDIVIDUAL DESIGNER, BUT ALSO OTHER DESIGNERS AND THEN THE CLIENT OR OTHER INTERESTED PARTIES AS THEY CAN EXPLAIN AND PROVIDE INSIGHT INTO THE IMPORTANCE OR POSITIVE NATURE OF POSSIBLE ATTRIBUTES OR SELECTED CHARACTERISTICS.

IN SUMMARY THIS METHOD IS TO REMOVE THE ASSUMPTION THAT CERTAIN METHODS, CHARACTERISTICS OR CRITERIA ARE NOT INHERENTLY SUPERIOR, BUT THAT EACH HAS POSITIVE ATTRIBUTES BASED ON THE CONTEXT OF THE DESIGN INTENTIONS AND THE INDIVIDUAL ITERATION.



A FRAME OF MIND

FRAMEWORK FOR VEGETATED ASSEMBLIES

START

THINKING ABOUT PHENOMENOLOGY, COLOR, COGNITION, AND DESIGN:
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