COLOPHON

A Manual of Living Architecture

Prepared from field notes, horticultural practice, and long observation.

Issued for persons intending to plant structures whose completion may belong to another decade.

Methods described herein concern living material. Species, climate, soil, water, and circumstance remain controlling conditions.

The right wood, in the right environment, needs no paint.

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Symbolic Mechanics Division

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A Manual of Living Architecture

SYMBOLIC MECHANICS DIVISION

I. Site Before Structure

A living structure begins with placement. The first survey should concern the ground more than the form intended for it.

Water, light, wind, soil, existing growth, and access will govern the work for decades. A poor choice made at the beginning remains expensive long after the original reason for it has been forgotten.

The right wood, in the right environment, needs no paint.

Water

Begin after rain. Walk the whole site while the ground is still showing what the storm did. Standing water, fresh channels, exposed roots, washed soil, and collected leaves make drainage visible in a way dry weather does not.

Repeat the walk in another season. A hollow that appears harmless in summer may remain wet through winter; a slope that drains freely in spring may become hard and dry by late summer. Note both conditions before deciding what should be planted there.

Surface water is only part of the question. Dig where important trunks may stand. Persistent saturation, compacted layers, and shallow rooting can produce trees that live but never become dependable structural members.

Use wet ground where it is useful. Willow, alder, and other tolerant material may make excellent work there. Keep species that require firmer footing out of it. Irrigation should support establishment and exceptional weather, not compensate indefinitely for a bad match between plant and site.

Light

Map the site in more than one season. Winter sun passing through bare branches can make a place appear open that will be deeply shaded by midsummer.

Existing trees will also change the map. A young canopy occupies little sky; ten years later it may govern an entire planting. Consider where those crowns are moving and which intended walls, roofs, or screens depend on dense growth.

Shade changes form as well as vigor. Branches reach toward openings, lower growth thins, and trunks may lean toward dependable light. This can be useful when long supple growth is wanted. It is a poor basis for a wall that depends on even branching from the ground upward.

Wind

Treat wind as a permanent load. The ordinary prevailing direction matters, and so do the places where storms accelerate through gaps, over ridges, or around buildings.

Existing trees provide a record. Repeated lean, broken tops, one-sided crowns, and old scars show where exposure has already done its work. Grasses, smoke, rain, and loose leaves help locate smaller channels that may not be obvious on a still day.

Fresh grafts, training frames, and newly bent leaders are especially sensitive to repeated movement. Place delicate work where it can establish without being shaken loose every time the weather changes.

Plan for the severe afternoon that may arrive once in twenty years. By then the structure will be larger, heavier, and carrying more leaf surface than it did when the site was chosen.

Soil

A full soil analysis is sometimes useful. A shovel is always useful.

Dig in several likely planting positions. Note depth, stone, compaction, drainage, root activity, and the way the soil behaves in the hand. Existing roots often show hard layers and wet zones more clearly than the surface does.

Then look outward. Species already prospering nearby have completed a long local trial of climate, disease, insects, drought, and soil. Their success does not make them suitable for every structural purpose, but it deserves more weight than a nursery description written for a broader region.

Existing Growth

Clear slowly. A mature tree may already provide shade, shelter, an anchor point, a boundary, or one side of a room. A thicket may become a screen with selective pruning. A line of young trees may already contain the beginning of a wall.

Keep enough of the site intact to continue reading it. Once the ground has been cleared and replanted, some of the best evidence about moisture, wind, browsing, and competition disappears with the vegetation that recorded it.

Movement

Paths deserve to be discovered before they are formalized. Carry tools, water, stakes, and cut material through the site. Visit in rain and after dark. Routes that remain convenient under those conditions are usually worth keeping.

Future maintenance requires room around trunks and unions. A passage that is generous between saplings can become narrow

once stems thicken and lower branches accumulate. Leave enough working space for a ladder, a pruning saw, and a person carrying something awkward.

Scale

Mark the proposed footprint at mature dimensions. Walk it before planting.

Stand where the future walls may be. Consider trunk diameter, shoulder-height branches, access for repair, and the space needed to replace a failed member. Dense planting can produce an immediate effect, but the final structure must have enough ground, light, and air to remain healthy.

A First Survey

The site record can be simple. Mark slope, water, seasonal light, prevailing wind, soil character, established trees, animal pressure, paths, and likely planting zones. Add dates to observations that may change.

“Wet ground” is a weak note. “Standing water four days after heavy rain, February” can be compared with the same place five years later.

A sketch, a few measurements, and short dated observations are enough. Long projects benefit from records that are easy to maintain.

Trial Planting

Use small trials before committing an important area. Plant several candidates under comparable conditions and watch them through more than one season. Compare establishment,

browsing, storm damage, rooting, branching, response to pruning, and the amount of attention each requires.

A year spent testing material is brief beside a structure expected to mature over thirty. Two years may be cheaper still.

Placement

By the time placement is decided, the site should have begun to argue for certain choices. Wet ground suggests one set of species, exposure another. Existing shade may serve a passage and weaken a screen. A path may belong ten feet from where it looked best on paper.

Use that information. Leave room for maintenance, replacement, and growth beyond the first drawing.

Choose the ground before choosing the form.

II. Species as Material

Choose species for behavior, and judge behavior at maturity.

The nursery tag gives height, spread, hardiness, and perhaps soil preference. Living architecture asks additional questions: how a stem bends, how readily a branch is replaced, whether old wood produces new shoots, how a wound closes, how the root system behaves under close planting, and whether two stems will tolerate prolonged contact.

The quickest survey begins outside the nursery. Walk old hedges, abandoned orchards, stream edges, roadside plantings, parks, and neglected gardens. Mature trees reveal the habits that matter.

A Working Comparison

Fast-growing trees give quick length and quick diameter. They also require frequent inspection. Ties disappear into vigorous bark, openings close, and one leader may overtake its partner in a season.

Slower trees allow a wider correction window. They extend the calendar and often reward careful early placement.

Fine-branching species suit screens and woven walls. Species that make long straight shoots are easier to use for arches, ribs, and overhead work. Trees that retain low branches can be useful at the base of walls; trees that shed them naturally are better treated as columns.

These are tendencies, not grades. A good species is one whose habits match the job.

What to Look For in the Field

A mature specimen can answer several questions at once.

Look at old storm wounds. Sound closure around an injury indicates useful wound response. Repeated splitting at narrow forks suggests a form that will need careful training. Long, unbroken laterals show one kind of structural promise; dense renewal from old wood shows another.

Look where branches touch. Some species remain separate for decades. Others fuse readily under pressure. Natural unions are especially useful evidence because they show what the tree does without assistance.

Look at the base. Surface roots, suckering, buttress development, and the spread of neighboring trunks all matter when several trees are expected to occupy one architectural footprint.

Look above all at specimens that have been neglected. They show the tree's own preferences after human intention has gone away.

Flexibility and Recovery

Young wood should bend through the required curve without cracking, crushing, or forming a sharp fold. A useful test needs no instrument. Bend a fresh shoot gradually and note where resistance rises.

Flexibility changes quickly with age. A species that is easy to train at one-half inch diameter may become stubborn at an inch and a half. That change determines the useful training window.

Recovery matters just as much. Remove a small lateral from a test plant and watch the response over the next season. Some trees replace growth readily near the cut. Others retreat farther than expected or produce crowded weak shoots.

For work that depends on repeated pruning, predictable recovery is valuable material behavior.

Roots and Competition

Several trunks planted as one structure eventually become one root neighborhood.

Allow for mature spread. Close planting increases competition for water, light, and nutrients, and some species accept that condition better than others. Observe old hedges and coppice stools for local evidence.

Keep principal root zones out of paths used by vehicles, repeated digging, or heavy storage. A well-trained upper structure can be weakened years later by compaction around the base.

Nearby paving, drains, walls, and foundations also belong in the species decision. Root behavior that is harmless in woodland may be unacceptable beside masonry.

Pruning Character

Old pollards and hedges are practical reference books.

A tree that has been cut repeatedly for fifty years shows how it handles recurring intervention. Note the size of old wounds, the attachment of replacement shoots, cavities, decay, and whether the crown remains vigorous.

Living architecture should rely mostly on small cuts made early. Even so, a forgiving pruning character provides room for storms, mistakes, and later repair.

Joining Character

Where the design depends on living unions, test before committing the whole structure.

Plant several candidates under similar conditions. Bring paired stems into contact. Try simple sustained contact on some and approach grafts on others. Label the pairs and leave controls untouched.

After two or three growing seasons, compare swelling, continuity, bark condition, and the amount of intervention each pair required.

A successful test is more useful than a species reputation copied from another climate.

Longevity and Sequence

An arch that takes fifteen years to establish should be made from material with a reasonable life beyond establishment.

Short-lived species still have a place. They can provide early shelter, wind protection, temporary screening, or a first framework while slower trees develop. In a long project, different species can belong to different generations.

Mixed planting also reduces dependence on a single pest or disease response. Keep the mixture legible. One species may carry the main frame, another may fill lower screens, and another may be reserved for wet ground or replacement growth.

A Small Trial Plot

Before planting a large structure, set aside a row or cluster for comparison.

Plant candidates at the same age and record the source and year. Train some, prune some, leave some alone. Note storm damage, browsing, dieback, branching, flexibility, graft response, and the frequency of attention required.

After several seasons the differences become obvious.

Keep the species that suits the site, the intended form, and the amount of maintenance you can actually provide.

Choose for the tree you will have in twenty years.

III. The Young-Tree Window

Most of the shaping that determines a living structure is easiest while the material is young. Stems bend readily, cuts remain small, and a few inches of guidance can prevent years of later correction.

The useful period is not a single age. It moves outward with each season. Last year's leader may already be stiff while this year's extension growth can still be redirected with two fingers.

Establishment

Give newly planted material enough time to establish before asking it to carry a difficult form. Strong extension growth, healthy foliage, and good recovery from minor pruning are better signs than the calendar.

Once the tree is growing reliably, establish direction early. A stem that hardens several feet away from its intended line can still be corrected, but the work becomes heavier and the resulting curve less clean.

Pressure

Training usually requires less force than beginners expect. The safest bends are produced by broad, distributed pressure applied over time.

Cord, webbing, padded wire, stakes, wooden spacers, and light temporary frames are sufficient for most young work. Contact surfaces should be wide enough to avoid cutting the bark, and every restraint should remain visible for inspection.

A spring tie can become a summer girdle. During active growth, check attachment points often enough that the material never has time to disappear into the stem.

Bending

Large curves are made in stages. Set a moderate bend, allow growth to continue, and advance the line later. Several light attachment points produce a cleaner arc than one hard pull near the middle.

Resistance is information. When a stem begins to flatten, crease, or crack, the useful bend for that session has already been exceeded. Release pressure and continue another time, or select a younger shoot.

Springback is normal. Temporary frames may therefore be set slightly beyond the intended finished line where the species and form allow it. Test the result gradually rather than guessing.

New Growth

The easiest material to place is growth that has not yet hardened. During the main growing period, watch new leaders and laterals before they become structural decisions of their own.

Select the shoots that serve the form and remove clear competitors while the wounds are small. Redirect useful laterals toward future crossings. Keep intended openings free from the beginning.

A few minutes of summer work can remove the need for a saw years later.

Stakes and Frames

Stakes establish direction; frames establish repeated geometry. Both are temporary.

Set supports firmly enough to survive ordinary wind without rubbing the trunk. Keep the tree accessible. A training frame that hides bark, joins, and ties makes inspection harder than the geometry is worth.

Remove support in stages once the living member begins to hold its line. Loosen a tie, release part of a frame, and watch the response for several weeks. Material that continues to move can be supported for another season.

Spacing

Young planting encourages optimism about space. Mature trunks correct it.

Mark doorways, paths, and working clearances at the dimensions they will need later. Consider the room required on both sides of a wall for pruning and repair. Allow for thickening inward around arches and tunnels.

Crowding can be useful in woven work, but it should serve a specific purpose. Planting extra trees merely to make the first years look finished usually creates competition and removal work later.

Ties

Use ties that can be found again. Soft, broad material is preferable where it touches bark; thin wire should never bear directly on a growing stem.

Label any restraint expected to remain more than a season. A date is enough. Old hardware becomes dangerous chiefly when it is forgotten.

Remove a tie when its job is done. Do not preserve obsolete hardware because the tree has begun to grow around it.

Pruning During Training

Training cuts should be early and purposeful. Remove growth competing with a chosen leader, clear an opening, or encourage useful replacement growth. Keep enough foliage to maintain vigor.

The tree's response matters more than the neatness of the first cut. Revisit the work after new growth appears and adjust from what the plant actually did.

Protection

Young structural material attracts ordinary damage. Deer, goats, rabbits, mowers, trimmers, falling branches, and careless foot traffic can erase several seasons quickly.

Protect important leaders, grafting points, and trunks until they are large enough to withstand the local risks. Make guards visible and easy to remove. Temporary wind shelter may also help during establishment, provided it does not become permanent shade.

Uneven Growth

Paired members rarely develop at the same rate. One side of an arch may run ahead; one trunk in a wall may dominate; shade may hold another back for a season or two.

Correct the imbalance by managing vigor, light, angle, and timing. Delay a planned junction until both sides are capable of carrying it. The calendar is not part of the structure.

Annual Work

During active growth, inspect ties, guards, new leaders, abrasion points, and temporary supports. Redirect growth while it is supple and remove obvious competitors while they are small.

During dormancy, step back from the details. Review the overall line, make planned cuts appropriate to the species, repair frames, replace worn restraints, and record the decisions that will matter next season.

The young-tree window closes gradually. Each season adds strength and removes some flexibility. Regular attention during these years determines how much force the mature structure will later require.

IV. Geometry That Grows

Living architecture becomes easier when the geometry is plain enough to remain visible through growth.

A line can wander slightly and still read as a wall. An arch can thicken and remain an arch. A circle can lose one member and still hold the shape of a room. Simple forms tolerate the variations that living material introduces.

The useful vocabulary is small: line, arch, circle, grid, tunnel, dome, room.

The Line

Mark a wall with stakes and string before planting. Walk it from both ends and from the places where it will be approached. A line seen from a distance can absorb small irregularities; a line defining a passage needs more exact spacing.

Set the trees for mature diameter. The planting may look thin for several years. Resist filling every gap with permanent material merely to make the wall appear finished.

A line becomes architectural through repetition. Regular trunks, repeated intervals, or a consistent woven plane are enough.

The Arch

Two young stems planted opposite one another can be trained toward a shared crown. The geometry is simple and the future clearance is easy to underestimate.

Lay out the opening at mature scale. Add room for trunk thickening, low branching, and the work of pruning from both sides. Broad curves distribute strain better than abrupt bends near the base.

Where a temporary frame is used, let it describe the curve rather than carry the trees indefinitely. Several light contact points are preferable to one hard pull.

The crown may be joined, crossed, or kept as two neighboring members, depending on species and purpose.

The Circle

A circle begins with a center point and a cord.

Establish the radius and mark the planting positions before digging. The same ring can become several different things over

time: a row of columns, a woven enclosure, a roofed chamber, or the lower order of a dome.

Decide which of these is intended because the pruning will differ. A columnar room keeps trunks distinct. A screen encourages low lateral growth. A future dome preserves leaders capable of turning inward.

Keep entrances wider than they first appear to need. Growth gathers at edges.

The Grid

A grid is useful wherever members must cross repeatedly.

Vertical stems can be planted in regular intervals and laterals trained across them, or two ranks can be woven together from the beginning. Some crossings may remain mechanical contact points; selected crossings may become living grafts.

The strength of the grid is replaceability. A failed member can be routed around or renewed without losing the whole pattern.

Dense grids create a large inspection burden. Every crossing is a possible abrasion point, trapped-bark pocket, or future union. Use the coarsest spacing that still serves the purpose.

Tunnel: A Repeated Arch

A tunnel is a sequence rather than a new form.

Establish the path first. Place paired trees at measured intervals and complete each arch as an independent unit. Later growth can connect neighboring arches along the length of the passage.

This method allows the tunnel to be extended in stages and makes a damaged bay easier to repair.

The working clearance matters as much as the finished appearance. Leave room for ladders, tools, and winter access. Ends usually need extra pruning because light encourages vigorous growth there.

Dome: A Circle Turned Inward

A dome begins with a ring of principal stems.

As the leaders gain height, turn them gradually toward an upper ring or distributed set of junctions. Bringing every stem to one exact point produces crowding and makes later inspection difficult.

Keep the lower frame open while the crown develops. Light must reach the interior long enough to maintain useful growth at the sides.

A dome often appears dense before it becomes structurally mature. Thin with the intended interior in mind.

Room

A room needs surprisingly little enclosure.

Four or five principal trunks can establish corners. A woven section can suggest a wall without filling it. Overhead branches can define a ceiling while leaving open sky between them.

Lay out human use before adding botanical detail. Stand where a chair might go. Walk the entry. Turn with a ladder. Look through the proposed window. Mark the places where sight and movement matter.

Then plant around those uses.

Repetition, Variation, and Scale

Geometry should remain clear without demanding mechanical perfection.

Repeated intervals give the eye enough information to understand a structure even when individual trees lean or thicken differently. Three arches establish a pattern. Ten turn the pattern into a walk.

Variation will arrive without assistance. Light differs. Soil differs. One tree grows faster. Storms edit the plan. The geometry should be strong enough to absorb these changes.

Allowance

Drawings should show mature trunks, not nursery stems.

Mark doorways, path widths, ladder positions, and the likely inward growth of walls and roofs. A two-inch sapling can become a foot of trunk. A decorative branch can become a shoulder-height obstruction.

Openings are maintained from the beginning. Small annual cuts preserve a doorway more cleanly than a large correction later.

Load Paths

As living geometry matures it carries increasing weight. Leaves hold rain. Fruit and snow add seasonal loads. Long branches gain leverage as they extend.

Curves, multiple members, and distributed junctions carry this change well. Important spans should have more than one route back to the ground where the design permits it.

Reserve shoots near principal members can be trained as future supports or replacements.

Marking and Mock-Up

String, stakes, measured cords, bamboo, light lath, and simple templates are enough for most layout work.

For a room or tunnel, mock up the opening at full size before planting. Walk through it. Carry tools through it. Stand inside it for a while.

Alter the temporary geometry freely. Once the trees are in the ground, every correction takes longer.

Complex structures are combinations of simple forms. Keep the components readable and give growth room to complete them.

V. Joining Living Members

A living join begins as a temporary arrangement. Two stems are placed together, held still, protected from damage, and given enough time to produce new tissue around the contact.

The exact method depends on species and diameter. The sequence remains much the same.

Before the Join

Use healthy, actively growing material. Weak stems close wounds slowly and are poor candidates for structural unions.

Choose a junction that will remain accessible for several seasons. Avoid placing an important join inside a tight fork, against a future pruning cut, or where the completed structure will make inspection difficult.

Bring the stems into alignment before cutting anything. Their natural spring should be modest at the intended position. A graft forced together under heavy tension remains difficult to stabilize.

Method A: Sustained Contact

For species that inosculate readily, simple contact may be enough.

1. Bring two young stems together at the intended crossing.

2. Arrange the contact so the surfaces meet cleanly without rubbing in wind.

3. Bind or clamp the stems with broad, non-cutting material.

4. Inspect through the growing season and reset the restraint as diameter increases.

5. Leave the contact undisturbed until swelling shows that the stems are growing around one another.

The process may take several seasons. Do not judge the union from surface swelling alone. Continuity and stability matter.

Method B: Approach Graft

Approach grafting keeps both stems on their own roots while the union forms.

1. Select stems of similar diameter where practical.

2. Mark the contact faces while the stems are held in their final position.

3. On each face, remove a narrow strip of bark to expose fresh cambial tissue.

4. Match the exposed surfaces closely.

5. Bind firmly enough to prevent movement.

6. Protect the junction from drying and repeated flexing.

7. Inspect regularly until growth bridges the contact and the union remains stable when support is reduced.

Keep the wound no larger than necessary. Accurate contact is more useful than a broad cut.

Restraints

Pressure should hold the work still without crushing bark.

Soft ties, padded clamps, wrapping, and temporary braces are suitable when they can be inspected and adjusted. Thin wire directly against living bark is difficult to justify.

Every restraint has an expiration date. Rapid growth can turn safe hardware into a girdle within one season. Mark long-term ties

with the installation year and place them where they remain visible.

Weaving

A wall can be woven without turning every crossing into a graft.

Use young, flexible shoots and make broad turns. Pass laterals alternately across neighboring stems. Keep the pattern loose enough to allow thickening.

Review each crossing as the wall matures. Some can remain free. Some may be separated if friction develops. A few can be converted into deliberate unions where additional stiffness is useful.

A simple weave is easier to inspect than a dense ornamental one.

Braided Groups

Two or three young stems can be trained together to form a thicker visual member.

Keep the arrangement loose. Tight braids create hidden surfaces, trapped bark, and pockets that are difficult to inspect once the stems enlarge.

The interior of the group deserves the same attention as the visible face.

Crossing Decisions

When two members meet, decide what the crossing is meant to become.

It may stay free, remain tied for a limited period, become a graft, or end in a pruning cut. Unplanned crossings accumulate quickly

in walls and roofs and often become the least accessible points in the structure.

Mark the intended junctions on the working drawing before the planting becomes dense.

Supporting a New Union

Fresh joins should carry little structural demand.

Brace arches, bent leaders, and grafted crossings until the surrounding wood has thickened. Remove support gradually rather than all at once. A union that moves noticeably under ordinary wind needs more time.

Temporary braces should remain visible and removable. Hardware hidden by growth becomes part of the maintenance problem.

Signs of a Good Union

A maturing junction usually becomes less remarkable. Growth thickens around the contact, bark remains healthy, and movement decreases. The two stems begin to carry load together.

Useful signs include continuous callus growth, even swelling, stable alignment, and normal vigor above the junction.

Photograph important unions from the same angle each year. Small changes are easier to judge side by side.

Signs of Trouble

Persistent movement, cracking, darkened tissue, drying bark, trapped moisture, insect activity, and one-sided swelling deserve attention.

Release a restraint that is biting into the stem. Reduce load on a junction that is opening. Separate a crossing that is abrading rather than fusing.

Some joins fail cleanly and can be attempted again on new growth. Keep a nearby shoot until the principal union has proved itself.

After Establishment

A living joint continues to change after it becomes structurally useful.

Diameter increases, load shifts, and surrounding branches alter the direction of force. Inspect principal unions as part of the annual maintenance walk, especially after storms and periods of rapid growth.

The best joins eventually disappear into the architecture. Their care becomes ordinary tree care.

VI. Maintenance Over Decades

Maintenance is mostly observation followed by small work.

The useful schedule is one that can be repeated for years. A structure visited regularly rarely needs the kind of correction that begins with a chainsaw.

The Annual Walk

Start at a distance. Look at the whole form before entering it.

Changes in lean, canopy density, symmetry, or height are easier to see from outside. Then walk the paths and inspect the places that carry the most consequence: principal trunks, arches, grafts, long horizontal members, entrances, and root zones.

Use the same route each time. Familiarity makes change visible.

Spring

Winter exposes defects.

Inspect split branches, storm-loaded arches, loose braces, displaced stakes, and damage around old unions. Check the ground for erosion or standing water that was not present in earlier years.

As growth begins, review ties and guards. Anything close in spring may be embedded by late summer.

This is also the time to identify replacement shoots. Mark the useful ones before routine pruning removes them.

Summer

Summer work is mostly control.

Watch water stress. Maintain clear doorways and paths. Redirect vigorous leaders while they are still flexible. Thin only enough to preserve light and form.

Dense structures can shade their own interiors. Weakening lower branches, sparse leaves, and long pale shoots often indicate that light is becoming scarce. Open small channels through the canopy rather than exposing a long-shaded interior all at once.

Check woven crossings and young grafts during the period of fastest diameter growth.

Autumn

Review weight before severe weather.

Long laterals, heavy fruiting branches, and dense roof growth may need reduction. Clear dead wood over paths and occupied areas. Inspect drains and low ground before seasonal rain.

Record major changes while the year's growth is still easy to compare with earlier photographs.

Winter

Dormancy makes the structure readable.

Review overall geometry, plan pruning, repair temporary frames, replace worn restraints, and decide where the next season's training will occur.

Many species tolerate planned pruning well during dormancy, though timing should follow local arboricultural practice and the needs of the species.

Use winter to update the site record. Ten minutes of notes can save an hour of speculation years later.

A Diagnostic Table

Opening narrowing — Remove young encroaching growth; check whether the original clearance allowed enough mature diameter.

Arch sagging — Reduce distal weight; inspect crown joins and the bases of the principal stems; consider a secondary living support.

Interior thinning — Review shade and canopy density; improve light gradually.

Tie disappearing into bark — Remove or reset immediately; record any retained embedded hardware.

Graft moving in wind — Restore temporary support and reduce load until more wood has formed around the union.

Repeated dieback on one member — Check root condition, drainage, disease, and competition before retraining the top.

Soil hardening around principal trunks — Redirect traffic and relieve the cause of compaction.

Water appearing where the ground was formerly dry — Investigate drainage changes before treating symptoms in the canopy.

Pruning

Prune for a reason that can be stated before the cut.

Typical reasons are dead wood, damage, overload, loss of clearance, competition with a chosen leader, obstruction of light, or preparation for a replacement member.

Early cuts stay small. Preserve useful shoots near important junctions until the structure has enough redundancy elsewhere.

Large wounds should remain unusual.

Root Zone

The ground is structural material.

Keep heavy traffic, repeated trenching, fill soil, and storage away from principal roots. Maintain the natural root collar. Watch changes in drainage caused by new paths, neighboring construction, retaining walls, or erosion.

Root damage often appears in the crown long after the original disturbance has been forgotten. Record significant work near the structure even when no immediate damage is visible.

Storm Work

After severe weather, make the site safe first. Secure hanging branches, unstable members, and blocked access.

Then stop and inspect.

A damaged section may contain useful living material for repair. Split branches can sometimes be reduced and retained. Nearby shoots may be capable of replacing a lost rib or wall member. Hasty cleanup can remove the best repair stock.

Photograph damage before major cutting when practical.

Repairs

Use repairs that can be inspected.

Retraining, load reduction, temporary bracing, and living replacement growth should be considered before elaborate hidden hardware. Permanent mechanical support, when necessary, belongs under competent arboricultural design and continued inspection.

Leave repairs visible until they have proved themselves.

Records

A maintenance record can remain very small.

Keep dates for major pruning, failed unions, replacement planting, disease, storm damage, hidden metal, structural support, and unusual changes in water or soil.

Fixed-point photographs are especially valuable. Take them from the same places and, when possible, in the same season.

After ten years the record becomes a second pair of eyes.

Regular maintenance keeps the structure understandable. That is most of the work.

VII. Designing for Succession

Living architecture is easiest to preserve when succession is included in the original plan.

A tree may live for generations and still lose the branch carrying a doorway. A disease can remove one species from a mixed planting. A storm can alter a roof in an afternoon. The structure continues through replacement, adaptation, and records clear enough for another person to use.

More Than One Age

Planting everything at once creates a structure in which every principal member enters old age together.

Where the site allows it, establish younger material near important older members. These trees may remain secondary for years. Their value appears when a wall thins, an arch declines, or a principal trunk must be removed.

Succession planting need not imitate the original exactly. The replacement has to preserve the useful function and the larger form.

Temporary Trees

Quick species can serve the early years well.

They may provide wind protection, temporary shade, privacy, or a first enclosure while long-lived material establishes. Their eventual removal should be part of the plan from the beginning.

A temporary tree left too long can become the largest and most difficult member of the structure. Mark its intended role in the site record.

Replacement Before Removal

A declining member often gives years of warning.

Reduced extension growth, repeated dieback, cavities, poor leaf cover, fungal activity, or a worsening structural defect may justify beginning its successor while the old tree is still functioning.

Plant or select the replacement, give it light, and begin training it toward the required position. The old member can be reduced as the new one assumes more of the role.

This overlap is one of the great advantages of working with time.

Reserve Growth

Mature structures benefit from a small amount of deliberate redundancy.

A secondary shoot near an important arch may become a future rib. Young stems behind a wall can replace older ones without reopening the entire boundary. A spare leader can be removed later if the principal member remains sound.

Reserve material should be recognizable as reserve material. Otherwise an enthusiastic pruning session may erase twenty years of foresight.

Access for the Future

Keep paths to principal trunks and junctions usable.

Leave enough room to remove a failed member without destroying its neighbors. Preserve planting pockets where new trees can establish. Avoid creating an interior that can only be reached by climbing through the structure itself.

Maintenance access is part of the architecture, even when visitors never notice it.

Records for Another Person

The record should allow a competent stranger to understand the site.

Include species, planting years, important grafts, hidden hardware, principal load-bearing members, replacement trees, and any unusual intervention that would not be obvious from inspection.

Simple drawings are sufficient. Photographs with dates are often better than elaborate plans.

Write plainly. A note such as “young hornbeam behind west arch reserved as replacement” is more useful than a private symbol whose meaning disappears with its author.

Changing the Plan

Long projects deserve slow revision.

Before removing a large established member for a new idea, mark the proposed change and live with it. Watch the effect on light, movement, shelter, and neighboring trees. A season of observation is inexpensive beside the time required to replace mature wood.

Some parts of the original scheme will prove unnecessary. Others will become more important than expected. Keep the useful intention and let the drawing change.

Partial Loss

A mature site will contain gaps, scars, old wood, and altered rooms.

Some dead or declining material can remain where it is stable and useful. It may continue to define a boundary, support habitat, or carry younger growth. Material that threatens occupied areas or principal structure should be removed with the same care given to any mature tree.

Age should be legible. A thirty-year structure need not pretend to be new.

The Mature Site

After several decades, training occupies less of the calendar. Young bends have become trunks. Temporary frames are gone. Some original joins are no longer easy to identify. The geometry remains, softened by ordinary growth.

At this stage the work is mostly selection: what to preserve, what to lighten, what to replace, where to admit light, and where a new generation should begin.

Different parts of the site may now belong to different ages. One room may be mature while another is only being planted. A tunnel can be old at one end and young at the other. This unevenness is normal in work measured over decades.

Stewardship

The useful questions change with age. Early work asks where growth should go. Later work concerns what should be preserved, replaced, opened, or allowed to continue.

Keep the site healthy and usable. Preserve enough young material to carry important forms forward. Leave access, records, and visible evidence of unusual interventions for the person who follows.

Do not demand permanent youth from living things.

Continuity

Succession belongs to the design. Plant replacements early. Keep younger growth near old structure. Allow one generation to support the next.

The finished work may never exist at a single moment. That is acceptable.

A living structure is carried forward.