

BUILD WITHOUT REGRETS

The Healthy Home Pre-Design Guide

What to understand before you renovate or build

TONG DONG ARCHITECTS

Healthy homes begin with better decisions—not more products.

Before You Choose the Finishes

The choices with the greatest impact on health, comfort, durability, and long-term performance often happen before the visible selections.

Most homeowners begin with flooring, cabinetry, countertops, paint, fixtures, and appliances. Those decisions matter.

But many consequential choices happen earlier—inside walls, roofs, mechanical systems, layouts, and the building envelope. Some are easy to change later. Others become embedded in the building and may be expensive, disruptive, or impossible to correct once construction begins.

This guide helps you recognize those decisions earlier. You do not need to become a building-science expert. You need to understand what deserves attention first, which systems affect one another, and which questions to ask before construction begins.

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Start With the Decisions That Are Hardest to Change

Reduce regret by separating embedded decisions from selections that remain flexible.

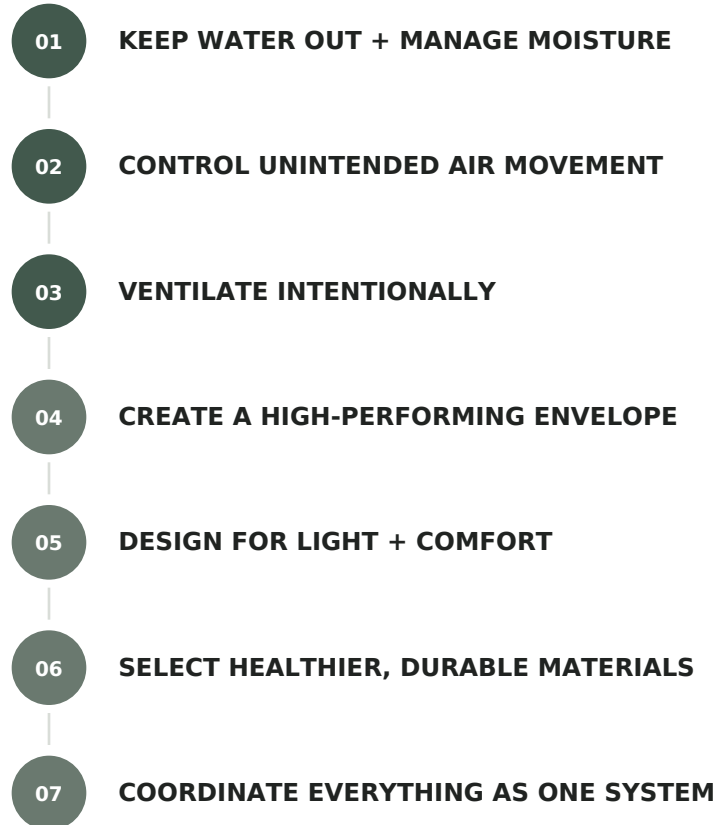
DIFFICULT TO CHANGE LATER

- Orientation + layout
- Window placement + structure
- Wall and roof assemblies
- Waterproofing + air sealing
- Ventilation + mechanical distribution
- Major plumbing locations

EASIER TO CHANGE LATER

- Paint + furniture
- Decorative lighting + hardware
- Accessories + window treatments
- Many surface finishes

THE HEALTHY HOME DECISION HIERARCHY



BUILD WITHOUT REGRETS RULE

Spend attention first on the decisions that will be hardest to undo.

Air + Ventilation

Where does fresh air actually come from?

Cooking, showering, cleaning, furnishings, pets, and everyday living all affect indoor air. A healthier interior requires more than low-emission finishes or an air purifier. Think about air as a system.

REDUCE POLLUTANTS AT THE SOURCE

- Consider lower-emission paints, cabinetry, adhesives, and furnishings.
- Minimize unnecessary fragrances and separate pollutant-generating spaces.

EXHAUST POLLUTANTS WHERE THEY OCCUR

Prioritize kitchens, bathrooms, laundry areas, garages, and mechanical spaces. Effective local exhaust removes moisture and pollutants before they spread.

VENTILATE INTENTIONALLY + FILTER APPROPRIATELY

Windows depend on weather, outdoor air, and occupant behavior. During substantial work, determine how outdoor air is introduced and stale air removed—potentially with an ERV or HRV. Coordinate filtration with actual equipment and airflow.

MANAGE HUMIDITY

Ventilation, cooling, dehumidification, exhaust, and the building envelope all influence indoor moisture levels.

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Start by understanding how air enters, moves through, and leaves the home.



Moisture + Water

Before you worry about mold, understand the water.

Stained drywall, musty odors, damaged flooring, peeling finishes, and mold often begin with one condition: moisture ended up somewhere it should not—or could not dry once it got there.

MOISTURE FROM OUTSIDE

- Rain + snow
- Groundwater
- Poorly drained roofs
- Windows, doors + exterior walls
- Terraces + balconies

MOISTURE FROM INSIDE

- Plumbing leaks + showers
- Cooking + laundry
- Humid indoor air
- Mechanical equipment
- Condensation

SECOND: ALLOW FOR DRYING

Buildings are rarely perfectly dry forever. Rain can get behind cladding, plumbing can leak, construction materials may hold moisture, and humid air can reach cold surfaces. Ask: if something gets wet, can it dry?

FIRST: KEEP UNWANTED WATER OUT

OFF THE ROOF ↓

AWAY FROM OPENINGS ↓

DOWN EXTERIOR WALLS ↓

AWAY FROM FOUNDATIONS ↓

AWAY FROM THE BUILDING

WATCH FOR CONDENSATION

Insulation, air sealing, window performance, thermal bridges, HVAC, and ventilation all affect condensation risk.

BUILD WITHOUT REGRETS RULE

First understand where water comes from and where it needs to go.

The Building Envelope

What actually makes a wall work?

Walls, roofs, windows, doors, foundations, and slabs form the boundary between inside and outside. That boundary influences water, air leakage, temperature, condensation, acoustics, energy use, equipment demand, and durability.

CONTINUITY MATTERS

Even a thoughtful wall can perform poorly when control layers break at windows, doors, roofs, foundations, balconies, cantilevers, penetrations, or changes in material.

WINDOWS ARE PART OF THE ENVELOPE

Windows influence water management, leakage, daylight, heat gain and loss, condensation, comfort, views, and ventilation. Evaluate them as part of the complete building—not from a catalog alone.

FOUR CONTROL LAYERS

WATER	Drain bulk water away.
AIR	Control unintended movement.
VAPOR	Respond to climate + assembly.
HEAT	Insulate and limit thermal bridges.

ASK YOUR PROJECT TEAM

- Where are the water, air, vapor, and thermal layers?
- Are they continuous at transitions?
- Where are the major thermal bridges?
- How will penetrations be sealed?

Do not evaluate one material in isolation. Evaluate the assembly.

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Light + Comfort

A bright home is not automatically a comfortable home.

More glass can also create glare, overheating, unwanted heat loss, privacy issues, and uneven temperatures. Good daylight design puts light where you want it, when you want it, without unnecessary discomfort.

DESIGN DAYLIGHT AROUND HOW YOU LIVE

- Orientation: morning sun behaves differently from late-afternoon sun.
- Placement: window height, size, and location shape daylight depth.
- Shading: overhangs, trees, neighbors, and treatments alter solar exposure.
- Glare: a bright window in the field of view can reduce comfort.

COMFORT IS MORE THAN THERMOSTAT TEMPERATURE

Drafts, humidity, surface temperatures, direct sun, air movement, radiant heat, and mechanical noise all matter. Envelope, windows, shading, and HVAC contribute together.

DO NOT FORGET SOUND

Plan for connection and retreat: consider noisy adjacencies, plumbing near bedrooms, equipment location, floor and wall transmission, exterior noise, and privacy.

BUILD WITHOUT REGRETS RULE

Design for 7 AM, 4 PM, January, August—and real life.



Healthy Materials

“Natural” does not automatically mean healthy.

Neither do green, eco-friendly, non-toxic, or sustainable. Labels can be useful starting points, but no single word determines whether a material is appropriate for a particular home or application.

START WITH CONTEXT

- What is it made from—and does it release anything into the air?
- Where and how much is used? What happens if it gets wet?
- Which adhesives, sealants, coatings, or finishes are required?
- How will it be cleaned, maintained, repaired, and replaced?

LOOK BEYOND WHAT YOU CAN SEE

Review the complete assembly: adhesives, sealants, primers, coatings, cabinetry substrates, composite woods, insulation, waterproofing, underlayments, and joint compounds.

USE DISCLOSURES + CERTIFICATIONS AS TOOLS

Use evidence to evaluate emissions, ingredients, sourcing, durability, and impact. Certification should support judgment—not replace it. Durable, repairable materials can reduce replacement, dust, disruption, and waste.

BUILD WITHOUT REGRETS RULE

Ask for the healthiest appropriate material for this use and exposure.



Water + Kitchen + Bath

Healthy design continues at the fixtures you use every day.

WATER QUALITY

- Understand conditions before filtering.
- Test where contaminants are a concern.
- Evaluate older plumbing + fixtures.
- Target filtration to actual contaminants.
- Maintain filters and clean aerators.

KITCHEN

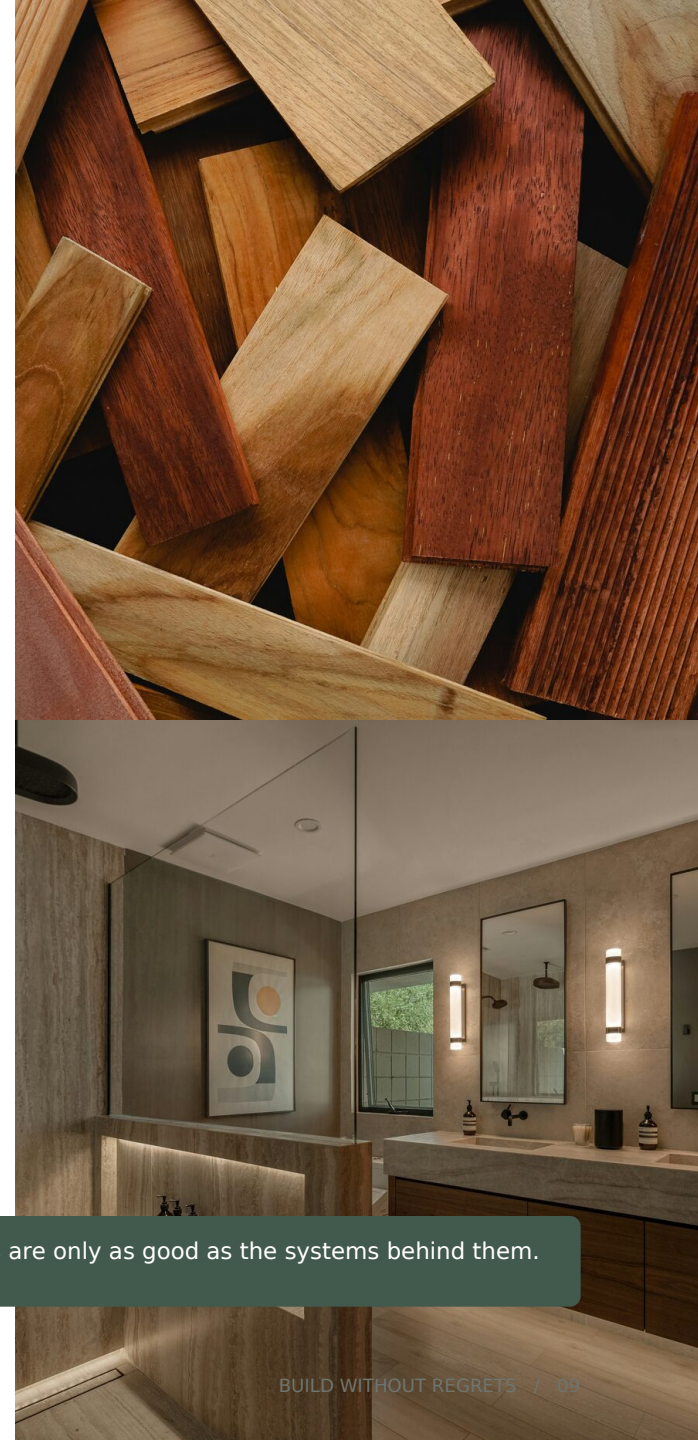
- Effective cooking exhaust
- Accessible storage + logical placement
- Easy-to-clean, durable surfaces
- Less reaching or climbing
- Task lighting for preparation + cleaning

BATHROOM

- Waterproofing behind wet-area finishes
- Effective bathroom exhaust
- Durable, moisture-appropriate materials
- Slip resistance + accessible controls
- Water efficiency + maintainable detailing

BUILD WITHOUT REGRETS RULE

The finishes are only as good as the systems behind them.



Family + Sleep

Design for the people who actually live there.

A healthy home should support routines, privacy, recovery, family life, and changing needs over time.

DESIGN FOR FAMILY LIFE

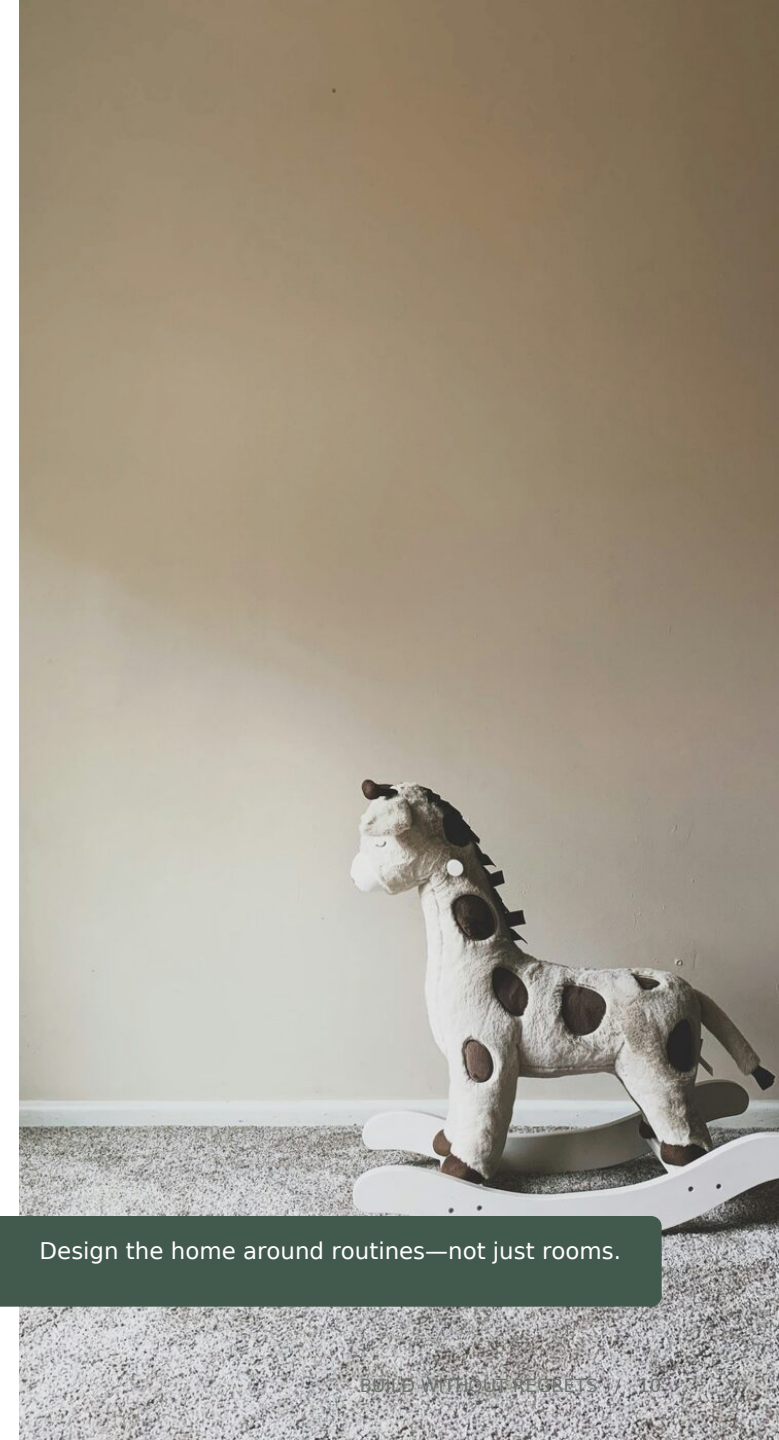
- Separate active and quiet activities.
- Create flexible spaces that evolve as children grow.
- Put closed storage where clutter naturally forms.
- Use durable, cleanable materials and safe circulation.
- Create places to gather—and places to retreat.

DESIGN FOR BETTER SLEEP CONDITIONS

- LIGHT — control night light while considering natural morning light.
- SOUND — reduce noise from rooms, plumbing, equipment, and outdoors.
- TEMPERATURE — provide comfortable, controllable sleeping conditions.
- MATERIALS — review mattresses, bedding, upholstery, flooring, paints, and cabinetry; use disclosures where helpful.

BUILD WITHOUT REGRETS RULE

Design the home around routines—not just rooms.



Nature + Mental Well-Being

Create spaces that help people feel grounded.

Views, texture, organization, privacy, spatial variety, and connection to nature shape how a home feels to live in.

CREATE CONNECTIONS TO NATURE

- Frame trees, sky, gardens, terraces, and outdoor space.
- Use natural materials where appropriate.
- Design for changing daylight throughout the day.
- Match plants to real light and maintenance conditions.
- Create opportunities to move between inside and outside.

CREATE CONNECTION + RETREAT

Balance social with private spaces, and active with quiet spaces. A successful home does not need every room to be open.

REDUCE UNNECESSARY VISUAL NOISE

Design storage around behavior—especially at entries, kitchens, children’s areas, offices, bathrooms, and laundry. Use light, texture, contrast, warmth, natural materials, and personal preference intentionally.

BUILD WITHOUT REGRETS RULE

Design for how you want the home to feel—not just how it looks.



Safety + Accessibility

Design for today—and for change.

Children grow. Injuries happen. Parents visit. Mobility can change. Thoughtful design can accommodate more of life without major reconstruction.

REDUCE AVOIDABLE HAZARDS

- Light stairs and circulation adequately.
- Use slip-resistant surfaces where floors may become wet.
- Minimize isolated steps and unexpected level changes.
- Provide clear paths, safe guards, handrails, and secure openings.

MAKE EVERYDAY ELEMENTS EASIER TO USE

- Lever handles; reachable storage, controls, and windows.
- Generous clearances and low-threshold shower strategies.
- Reinforcement for future grab bars; seating where useful.

THINK BEYOND MINIMUM ACCESSIBILITY

Accessibility is not only an add-on for disability. Many inclusive decisions simply make a home easier for everyone to use.

BUILD WITHOUT REGRETS RULE

Design for people now—and leave room for life to change.



Questions Worth Asking Before You Build

AIR

- Where does fresh air come from?
- Where does stale or humid air leave?
- How are cooking pollutants exhausted?
- How will filtration be addressed?

MOISTURE

- Where can unwanted water enter?
- How does water drain away?
- Where could condensation occur?
- If an assembly gets wet, can it dry?

BUILDING ENVELOPE

- Where are the control layers?
- Are they continuous?
- What happens at transitions?

LIGHT + COMFORT

- Where will direct sun land?
- Which rooms may overheat?
- Where is glare likely?
- Which spaces need acoustic privacy?

MATERIALS

- What is it made from?
- What else installs with it?
- Is it suited to the exposure?
- How is it maintained—and for how long?

THE PROJECT

- What problem are we solving?
- Which conditions need investigation?
- What becomes expensive to change?
- What is the full project investment?
- Who must be involved early?

BUILD WITHOUT REGRETS RULE

You do not need every answer. You need to know which questions matter next.

A Healthy Home Is Not One Decision

Air affects moisture. Moisture affects materials. The envelope affects comfort. Windows affect daylight and temperature. Mechanical systems affect air, humidity, sound, and energy use.

WHEN DOES THIS BECOME ARCHITECTURE?

When the question changes from “What is generally better?” to “What is right for this particular home?”

**You do not need a perfect home.
You need an integrated one.**

Every choice exists within a particular site, building, climate, budget, family, and project. The goal is a home where decisions support one another—one that stays dry, manages air intentionally, uses materials thoughtfully, provides good light and comfort, and supports the people inside.

NEXT STEPS

Not sure how ready you are?

Take the Healthy Home Readiness Assessment →

Planning a substantial project?

See TDA’s Healthy Home Design Approach →

Ready to discuss a project?

Discuss Your Project With TDA →