SAMPLE

Building the Housing of Tomorrow

The Structures We Inhabit

Aiman JoeHanz

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Introduction: The Machine the Reader Sleeps Inside

Housing is the only machine in this series that the reader sleeps inside, and the only one they are likely to buy. A grid can be audited from a distance and a port from a report; a dwelling is worn against the skin of a life - the mortgage against the paycheck, the commute against the lease, the insulation against the season - and it is the only essential good that most households ever purchase that costs several multiples of their annual income. That doubleness is the volume's subject and its method: a house is two ledgers at once. One is the shelter ledger - the rooms, the air, the water, the quiet, the walk to the school - the services the dwelling actually delivers to the people inside it. The other is the asset ledger - the title, the debt, the appreciation, the tax - the paper machine wrapped around the first. Most of the industry's failures, and almost all of its arguments, are cases of one ledger being read while the other is ignored; the resident who celebrates a rising asset value may be living in a shrinking shelter; the tenant whose rent is cheap may be paying the difference in mold, distance, and hours. This book teaches the reader to read both ledgers at once, because that double entry is what housing is.

The scale beneath the method is planetary. Every human alive requires a floor, a roof, and a door, and the machine that provides them is the largest asset class on earth - the single biggest destination of household debt, the largest line in most family balance sheets, and the sector whose booms and crashes now travel through national economies with the reliability of weather. It is also, by common agreement, short: the world's cities report waiting lists, the young report prices their arithmetic cannot reach, and the older stock reports rents that rise faster than the rooms improve. The shortage is not a mystery and it is not one villain's doing; it is the arithmetic of a machine that takes years to produce a unit, sits on land that only one supplier can sell, carries rules written one crisis at a time, and is bought with debt that punishes every mistake with a decade of interest. The book's wager is the series' wager, aimed at the machine the reader lives in: housing is legible, its failures are arranged by structure rather than by malice, and a reader who learns the structure can audit any dwelling, any development, and any housing promise - including their own.

The chapters take the machine apart the way the series always does. The current state comes first: the shortage, the arithmetic of affordability, and why housing behaves like no other market. The anatomy follows: the dwelling as a stack of five organs - the land and its rules, the shell and its physics, the

systems inside the walls, the title and its debt, and the street and its commons - because a house is not one product but five, each with its own failure modes and its own market. The catalog of failures walks the ways dwellings and housing programs go wrong, from the leaking shell to the stranded estate to the subsidy that raised the price it meant to cut. The mistakes chapter names the recurring sentences - the render mistaken for a design, the monthly payment mistaken for a cost, the suburb mistaken for a cause - and the disciplines chapter answers them with the honest house's working rules. The sequence chapter walks the unit's life from the feasibility study to the day the keys move; the economics chapter prices the whole animal, land to demolition, and reads the tenure ladder from the room-renter to the shareholder. A casebook of twelve composite cases - drawn from every class of failure and success on every continent, and named after no real place - walks the patterns end to end. The audit chapter compresses the whole volume into five questions a reader can ask in sixty seconds, in any language, at any housing meeting; and the forecast closes with the decade's honest bets, priced and dated for the reader to grade.

One reading note before the chapters begin. The volume names no real developer, city, project, or firm, uses no calendar years, and builds every case as a composite of patterns that recur on every continent - because housing arguments age fastest when they are pinned to one administration's slogan, and the machine underneath outlives every slogan. The reader needs no credential: the resident, the first-time buyer, the committee member, the student of cities all stand inside this machine already, holding one of its products. The only prerequisite is the willingness to read the thing one sleeps inside - and to hold both its ledgers, the shelter and the asset, in the same gaze. The machine is waiting to be audited. Begin with the state it is in.

A note on the volume's instruments and how they stack, offered because readers of the series use these books as toolkits rather than as arguments. The chapters each carry one working tool, and the tools are cumulative in a specific order: the anatomy is the vocabulary, the catalog is the diagnostic, the mistakes are the defenses, the disciplines are the habits, the sequence is the map, the economics is the price list, the casebook is the rehearsal, and the audit is the compression of all seven into sixty seconds. A reader who holds only the vocabulary can follow a housing argument; a reader who adds the diagnostic can name what is failing; a reader who holds through the habits can act; and a reader who holds the whole stack can teach it, which is the series' quiet goal - the machine's shortage will end, where it ends, through the

accumulation of residents who can read both ledgers and say so in public.

A note on the two ledgers' politics, offered before the argumentative chapters begin. This volume is deliberately even-handed toward the machine's positions, which will frustrate readers looking for a team: it treats the landlord's return, the developer's margin, the incumbent's equity, and the agency's budget as arithmetic rather than villainy, and it treats the tenant's exposure, the newcomer's queue, and the crowded household's health line as arithmetic rather than sentiment. The even-handedness is the method's requirement, not its cowardice - the audit cannot map a position it has already convicted, and the machine's genuine reformers, on every side, have all been readers who could price their own position honestly. The reader who wants a brief filed will find better books; the reader who wants a machine read is holding the right one.

A reader's note on the volume's chapter weight, offered because the machine's readers arrive with different urgencies. The reader facing a purchase or a lease this season should read the anatomy, the disciplines, and the audit first - the shelter's own instruments, in that order - and return for the machine's larger argument when the papers are signed. The reader facing a public argument - a committee seat, a campaign, a proposal sign at the corner - should read the catalog, the mistakes, and the economics first, because the public argument is where those three do their work. The reader who is the machine's professional - the planner, the surveyor, the agent, the lender, the committee member - will find the volume's honesty occasionally uncomfortable and its instruments familiar; the book's promise to that reader is that it holds their profession's own standards up to the light, and the reader who has carried those standards honestly will find the volume an ally rather than an accusation. All three readers finish in the same place: the audit, and the decade it prices.

One last note on the volume's numbers, offered in the spirit of the machine's own honesty. The book uses ratios where the debate uses figures: the three-in-ten payment threshold, the price-to-income ladder, the stock-to-flow ratio, the residual's triangle. The ratios are chosen because they travel - a threshold holds its meaning across currencies, statutes, and decades, where a figure dates in a season and invites the argument to become about the figure rather than the machine. The reader who needs the figures of their own district can obtain them by the audit's fourth question - where is the record - and the volume's method is designed to make that obtaining possible: the

machine's honest numbers are public, held by the registers and the statistics, and the reader who leaves this book knowing which five numbers to request has already out-read the debate that argues without them.

A final invitation before the first chapter, offered in the series' plain voice. The housing machine will out-argue any single reader: it is older than every administration, richer than every campaign, and more patient than every committee - and it has never once, in any decade, been moved by a mood. It is moved by readers: the resident who prices their own two ledgers, the committee member who asks for the yield, the household that keeps the record, the buyer who walks the joints before the signature. The volume's ambition is exactly that scale - not the debate's conquest but the reader's competence - and its promise is the machine's own: the dwelling rewards being read, the street rewards being counted, and the decade rewards whoever asked the questions while the questions were still cheap. The chapters that follow are the reading, the counting, and the asking - taught as one instrument, held by one resident at a door. Begin at the state.

The invitation, one last time, in the machine's own plain terms. Read the anatomy, and the dwelling becomes five named organs; read the catalog, and the failures become signatures on records; read the sentences, and the meetings become legible; read the disciplines, and the habits become a card; read the sequence, and the corner's sign becomes a gate; read the money, and the price becomes a stack; read the cases, and the patterns become rehearsals; read the audit, and the whole volume becomes sixty seconds; read the forecast, and the decade becomes five bets with a watchlist. Or read nothing and keep the card - the series has always allowed it, and the card is the volume's working core. The chapters follow, in the order the instruments stack, and the reader who walks them to the end will close the book at their own door, which is where the machine has been keeping the reader's exercises all along.

The volume's method, stated once more in the doorway because methods are kept by restatement: read the machine before arguing about it, price both ledgers before signing anything, and spend sixty seconds before the celebration hardens. The chapters teach the reading in the order the instruments stack; the audit compresses them; the forecast prices the decade they will be carried into; and every instrument, from the anatomy's five questions to the card's ten lines, works at the reader's own door first - which is the series' quiet pedagogy and this volume's particular honesty, because

housing is the one machine whose audit the reader sleeps inside. The state chapter follows, and the machine - enormous, short, and legible - is waiting to be read.

Chapter 1: The State of the Machine

The Scale Before the Argument

The housing machine's scale is easy to state and hard to feel. Every person alive needs a dwelling, so the machine's potential demand is the entire population, refreshed every generation and grown by migration, household formation, and the preference for living alone. The stock already built is the largest collection of physical objects humanity owns - more dwellings than vehicles, appliances, or any other manufactured thing - and the flow of new units is, in most markets, the smaller number by far: a mature city adds a fraction of a percent of its stock in a year, which means the housing most residents will live in next decade is already standing today. That ratio, stock to flow, is the machine's first structural fact and the source of its political weight: because the existing stock dwarfs the new supply, every policy argument is secretly an argument about the existing stock - who owns it, what it costs to keep, and who is allowed to live in it - even when it is announced as an argument about construction.

The money beneath the roofs is the second scale fact. Dwelling values are the dominant asset in most households' balance sheets and a dominant line in the banking system's collateral; mortgages and leases are the bridge between the household's income and the dwelling's price, and the interest rate is the toll on the bridge. When the toll rises, the price the same income can reach falls, and when it falls, the same dwelling bids higher - the reader can watch the machine's thermostat in the bond market's noise. No other machine in this library has this property: the product is bought with decades of future income, on credit, in a market where the lender cares more about the borrower's solvency than the building's quality. The industry's shapes - its cycles, its politics, its habit of building for the balance sheet rather than the bedroom - all descend from this one fact.

The Shortage, Stated Honestly

The shortage itself is better described as a set of arithmetic gaps than as a single number, and the honest statement names each gap separately. The first is the quantity gap: markets report more households - or more would-be households, the young adults doubling up, the couples delaying - than there are dwellings at the price those households can pay. The second is the mismatch gap: the stock exists, but in the wrong places, the wrong tenures, or the wrong sizes - the small flat standing empty in the shrinking town while the growing city queues for a room; the family-sized home held by a single elder

while the young family of five rents a single bedroom. The third is the quality gap: the dwelling exists and is nominally affordable, but its shelter ledger is negative - the mold, the shared meter, the hour commute - so its low price is really a transfer of cost from the rent line to the health, time, and school lines. A market can close one gap while widening the others, and the audit question throughout this volume is always which gap a given proposal actually moves.

The honest statement also includes the machine's successes, because the record is genuinely mixed rather than uniformly dark. Humanity has, within living memory, housed the largest urban migration in its history at a speed no earlier century could attempt - informal settlements built whole neighborhoods in years, industrial methods built whole districts in months, and the middle of the stock in most rich cities is dry, warm, plumbed, and lit to a standard that would astonish any previous century's royalty. The shortage is not the failure of the machine to work; it is the machine's failure to work fast enough in the places demand is growing, and its willingness to let quality and tenure rot in the places demand has left. The reader should hold both truths simultaneously and refuse every argument that requires simplifying either one into the other.

Why Housing Is Not a Normal Market

The textbook market - many buyers, many sellers, a product that can be shipped to where demand is - fails on housing in four specific ways, and the four failures explain most of the machine's strange behavior.

The first is fixed location. A dwelling cannot move to the buyer; the buyer must move to the dwelling, which means the dwelling's price is mostly the price of its position - the street's safety, the school's catchment, the job's commute - rather than the price of its construction. The building itself depreciates like any machine, wearing from weather and use; the land beneath is a different asset entirely, one whose supply cannot be increased by demand, and whose value is created mostly by the community around it rather than the owner's effort. This is the volume's most load-bearing distinction, and the anatomy chapter gives it its own organ: the reader who cannot separate the dwelling's price into its land share and its improvement share cannot understand a single housing argument, because the two halves move on different physics - one wears out and can be rebuilt, the other cannot be created and captures whatever the neighborhood gains.

The second is production time. The lag between a decision to build and a delivered unit is measured in years - land assembly, design, permits,

construction, fit-out - and demand can turn in months. The machine therefore systematically overshoots in booms and undershoots in recoveries: developers, reading today's prices, deliver units into the market of three years from now. The cycle is not the industry's stupidity; it is the arithmetic of a long production lag in a demand-driven market, and every professional in the chain knows the boom's last units always arrive late.

The third is durability. A dwelling lasts generations with maintenance, which makes it simultaneously a consumption good (rooms tonight), an investment (rooms rented forward), and a store of value (the title itself). The same object is priced by three different logics at once, and the machine's politics are largely a war between the three: the household that needs rooms tonight loses every bidding war to the balance sheet that needs the title, because the balance sheet can borrow against the asset's whole life while the household can only borrow against a few years of income. The reader should treat any housing argument that names only one of the three logics as incomplete by construction.

The fourth is the rule layer. No other consumer product requires, before it can exist, a public permission that specifies its size, height, use, occupants, and sometimes its appearance - and that permission is granted by a process in which the neighbors, who benefit from scarcity, hold standing. The rules were written one crisis at a time - after fires, scandals, crashes, and traffic studies - and each rule was defensible the day it was written; the sum is a machine that, in many high-demand districts, makes it illegal to build what the median income could afford, without anyone having passed a law to that effect. The rule layer is also the reason the machine's reform arguments are so bitter: the constraint lives in procedure rather than statute, and procedure is where the status quo's defenders fight best.

The Affordability Arithmetic

The word affordability is used in the debate as a mood; the volume uses it as a ratio, and the reader should learn the three ratios before believing any housing number. The price-to-income ratio asks how many years of the median household's gross income the median dwelling costs; at three, the market is reachable, at ten it is a caste system, and the ratio has moved from the first toward the second in a long list of celebrated cities. The payment-to-income ratio asks what share of the monthly income the monthly payment - rent or mortgage service - consumes; the working convention puts the threshold at three in ten, and the burdened share of households has

crossed it in markets that still call themselves healthy. The total-cost ratio, this volume's own preference, adds the dwelling's operating and transport costs to the payment and asks the whole question: a cheap payment in a distant suburb with a two-car requirement and a long commute is frequently the most expensive housing on the market once the whole ledger is priced. Every one of these ratios can be massaged by choosing the wrong denominator - the median income of the buyers rather than of the residents, the asking price rather than the transacted one - and the audit chapter teaches the denominators as a drill.

The arithmetic's other half is on the supply side, and it explains why the shortage persists despite universal desire to end it. A new unit's price must cover the land, the hard construction, the fees and finance, and the developer's return; when the rules make the permissible unit small, the land expensive, and the process slow, the cheapest unit the machine can legally deliver in that district may be several times the median income even with the developer's profit set to zero. The arithmetic, not any shortage of goodwill, is why so much of the new stock in expensive districts is luxury: the land already costs what only a premium unit can amortize. The reform question with content is therefore never whether developers should build cheaper, but what in the local arithmetic makes the cheap unit illegal or unprofitable - and the answer is always a specific number on a specific line: the land basis, the permitted density, the parking mandate, the finance rate, the fee schedule. The reader who wants to argue housing should learn to argue in those lines, because that is where the machine actually is.

The Reader's Standing Position

This volume's standing assignment, given at the start and collected at the end, is for the reader to audit their own dwelling first: to price their shelter ledger against their payment, their transport, and their hours; to separate the land share from the improvement share in their own address's value; to read their own lease or mortgage as the machine's contract it is; and to notice which of the machine's arguments their own household is currently making - the buyer hoping the scarcity holds, the renter hoping it breaks, the owner doing both in the same breath. Housing is the machine the reader cannot stand outside of, and that standing position is the book's pedagogy: every instrument in the following chapters can be verified against the reader's own door before it is ever pointed at a public argument. The machine begins at the threshold.

The Informal Machine, Named Honestly

No honest statement of the machine's state can skip the sector that houses a large fraction of humanity and appears in no developer's prospectus: the informal build - the settlement that builds itself, the extension added a floor at a time, the dwelling assembled from what the market's margins supply, on land whose title is a work in progress. The informal machine is not the formal one's failure only; it is also its proof, and the volume's honesty requires both halves said plainly. It is a failure when its organs are missing - the drains, the tenure's paper, the fire's escape - and the catalog's entries find it at a rate the code-built stock does not. It is a proof when its arithmetic is read: the machine's residents, priced out of the formal pipeline's floor, built the district the formal pipeline could not deliver - at a speed, a density, and a self-financed cost the regulated machine still studies with envy - and the decades' policy lesson has been the same on every continent: the informal settlement that receives infrastructure and tenure early becomes the next decade's ordinary neighborhood, and the one left to fight the map becomes the next crisis. The reader should treat the informal machine as the machine's own evidence about its constraints: where the formal floor is too high, the demand builds the dwelling anyway, and the only real policy choice is whether the building happens with the pipes or without them.

The Machine's Own Arguments, Mapped

The state chapter closes with a map of the debate itself, because the reader will meet these arguments a dozen times before the book is finished, and the map saves a decade of confusion. The supply side argues that the shortage is the envelope's doing and the price is scarcity's voice; the demand side argues that the market's failures are the market's nature and the household's help is the public's business; the incumbent argument defends the street as it stands; the reform argument prices the street as it empties. The volume's own position, stated once and held throughout: these are not four theories but four positions in one machine - the land's holder, the payment's maker, the street's keeper, the queue's member - and each argument is honest about the layer it reads and dishonest about the layers it does not. The book's method is to give the reader the whole stack and let the positions be priced rather than chosen, because a reader who can name which layer an argument serves can negotiate with it, and a reader who cannot is negotiating with weather.

The Machine's Demography

Beneath the prices and the rules, the machine is driven by a slower engine, and the reader should learn it because it is the one input the decade's politics

cannot legislate. The household formation engine: young adults leaving the family home, couples separating and doubling the dwellings one relationship once held, elders living longer in dwellings sized for the families that moved out - each a demographic fact that converts directly into a unit of demand, whatever the market's prices do. The shrinking engine: households getting smaller - the single-person household, the fastest-growing tenure form in a lengthening list of markets - which means the same population needs more dwellings, and the machine's supply argument is quietly demography's argument wearing a hard hat. The migration engine: the village-to-corridor flow that built the century's cities and the city-to-city flow that re-rates the receiving districts and empties the sending ones - both engines that the machine experiences as local demand it did not cause and cannot refuse. The honest demographic sentence, which the reader should hold alongside the machine's other arithmetic: the shortage is partly the machine's constraint meeting a demography that the machine's golden-age stock was never sized to serve - and the demography, unlike the envelope, does not respond to the committee's vote.

A Working Glossary for the Argument

The state chapter closes with the vocabulary the debate uses loosely and this volume uses precisely, because the machine's arguments are mostly definitional fights wearing price tags. Affordable: this volume's word means the total-cost ratio under the three-in-ten threshold at the resident's true income - not the buyer's, not the sticker's. Supply: the units the envelope permits, not the cranes the skyline shows - a distinction the supply chapter prices. Density: households per serviced acre, not floors per photograph - the reader who conflates the two is arguing about a building's shadow while the machine prices a school's seats. Tenure: the legal position, which the ladder chapter reads as risk - not a moral grade, not a personality. Submarket: the machine's honest description of what a city's "market" actually is - the family house, the starter flat, the rooms sector, the retiring downsizer's trade - each with its own prices, because dwellings are not fungible and a thousand units of the wrong submarket can stand beside an unshortened queue for the right one. The glossary is the volume's early gift: most housing arguments end, honestly, in the dictionary - and the reader who holds these five definitions can shorten a decade of meetings by an hour each.

The Stock's Ages, and the Decade's Inheritance

The machine's state has a fourth dimension the prices ignore: the stock is

aging, and the decade inherits it. The dwellings the post-war decades built - the mass housing pushes, the suburb programs, the tower estates - are crossing, as a cohort, into the age where their organs arrive at their service intervals together: the roofs, the pipes, the elevators, the systems' replacements, and the shells' thermal upgrades, all priced for a cohort that was built in the same few decades and therefore bills in the same few decades. The arithmetic is the reserve study's at the civilization's scale: the maintenance bill arrives as a wave, the deferral compounds at the catalog's rate, and the politics of the wave are the machine's hardest - because the repair is invisible, the deferral is painless, and the cohort's residents are frequently the households with the least capacity to fund the fix and the least mobility to leave it. The reader should read the stock's ages beside the shortage's queues and hold both honestly: the machine's decade is squeezed between a supply it cannot build fast enough and a stock it cannot afford to lose, and every policy that treats the two as separate arguments is mis-pricing both - the unit not built is the old unit the household cannot leave, and the old unit not maintained is the shortage's growth by another door.

The State, Summarized as Five Numbers

The state chapter compresses, before the anatomy opens the machine, into the five numbers the reader should be able to obtain for any district on earth - the machine's vital signs, and the volume's standing request list. The formation rate: households forming per year, the demand's demographic floor. The completion rate: dwellings delivered per year, the supply's honest meter - and the ratio between the first two is the shortage's single number, positive or negative, whatever the headlines say. The basis: the land's per-unit floor, the affordability's upstream author. The median: the resident's income, the denominator every price must survive. And the premium's trend: the insurance line's direction, the climate's quiet verdict on the district's decade. The reader who holds a district's five numbers holds its machine's state more honestly than any debate's rhetoric - and the audit's fourth question, where is the record, is how each of the five is obtained, which is the state chapter's final lesson: the machine is legible to whoever asks, and the state, stated in numbers, is the first proof.

The State's Honest Summary

The state chapter holds together, and the reader should close it with the paragraph the rest of the volume will keep proving. The machine is enormous, essential, and short where demand grows; its product is unlike any other, fixed

in place, slow to make, built to outlive its buyers, and financed with the household's whole future; its prices are the land's scarcity and the commons' quality wearing a building's costume; its arguments are its positions talking; its demography is arriving faster than its envelope is moving; its stock is aging into a maintenance wave the politics have not priced; and its state, honestly summarized, is the five numbers of any district - formation, completion, basis, median, premium - plus the one question the numbers cannot answer: who, in that district, is asking the five questions this volume teaches. The machine's state is a standing challenge, and the challenge's answer has always been the same on every continent where it has worked: residents who could read the machine, in numbers too large for the debate to talk around. The state chapter's summary is therefore the volume's first instrument: the machine, stated honestly, is legible - and the next nine chapters are the legibility's curriculum.

The Machine's History, Compressed to Its Lessons

The state chapter's last history lesson is deliberately short, because the volume carries no dates and needs none - the machine's turning points are taught by their mechanisms, and the mechanisms recur. The public health turn: the era that discovered the drain's arithmetic and built the first sanitary codes - the lesson being that the machine's biggest life-expectancy gains came from pipes and rules, not doctors, and the reader should treat the plumbing argument with the reverence its history earned. The mass production turn: the era that standardized the dwelling - the tract, the panel, the estate - and taught the machine its speed, its repetition, and its stigmas in the same decade - the lesson being that the machine's scale is a choice the rules make, and the stigma is a maintenance decision wearing an aesthetics argument. The credit turn: the era that wired the dwelling into the bond market and made the house the middle class's portfolio - the lesson being that the machine's cycles date from this wiring, and the reader who reads the rate reads the wiring's weather. The welfare turn: the era that built the public's own estates and learned, at great cost, both directions of the lesson - the state can build at a scale the market cannot, and the state can strand what it does not maintain. The machine's history, compressed, is the volume's whole argument in four mechanisms: the organs matter more than the medicine, the scale is chosen by the rules, the finance writes the weather, and whoever holds the building holds its decade. The reader who carries the four lessons reads every historical argument the debate offers - and every historical excuse.

A Note on Reading the Debate From Now On

The reader who finishes the state chapter has already changed their relation to the housing debate, and the change deserves one paragraph of naming. The debate's rhetoric - the crisis framing, the villain framing, the boom framing - will continue, because rhetoric is the positions' native language; the reader's change is that they now hear the arithmetic underneath it, the way a musician hears the chords beneath a song. A crisis headline is now a formation-rate beside a completion-rate; a villain story is now a position holding an envelope; a boom narrative is now a thermostat beside a basis. The change is not cynicism - the arithmetic is more hopeful than the rhetoric, because arithmetic can move while villains cannot be defeated - and it is not neutrality, because the volume's instruments take sides by existing: they side with whoever audits. The reader's remaining chapters are the chords themselves - the anatomy, the catalog, the sentences, the disciplines - taught one at a time, in the order that lets each be heard.

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The Five Numbers, Once More

The state chapter's parting line returns to its five numbers, because they are the reader's first possession and possessions deserve a clean handover: formation, completion, basis, median, premium - the demand's floor, the supply's meter, the price's author, the ratio's denominator, the map's verdict. Five numbers, obtainable by any reader in any district, and the machine's whole state compressed to a wristwatch's read. The chapters that follow give the numbers their meanings; the audit gives them their drill; the decade gives them their grades - and the reader who carries the five numbers carries the state of the machine the way its professionals do: on one hand, honestly, and always current.

ABOUT THE AUTHOR

Aiman JoeHanz writes the Building of Tomorrow series: plain-language field guides to the machines that run the modern world - how each machine actually works, how it fails, and how an ordinary reader can audit any claim made in its name. The series treats technology as a set of working structures rather than a stream of headlines, and it prices every machine the same honest way: the anatomy, the catalog of failures, the disciplines of the honest operator, and the sixty-second audit that carries the whole volume in a pocket. The housing volume was written, like its siblings, for the reader who lives inside the machine it describes - which is to say, for everyone.