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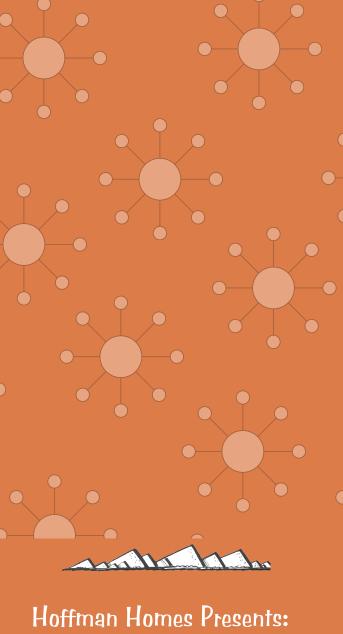
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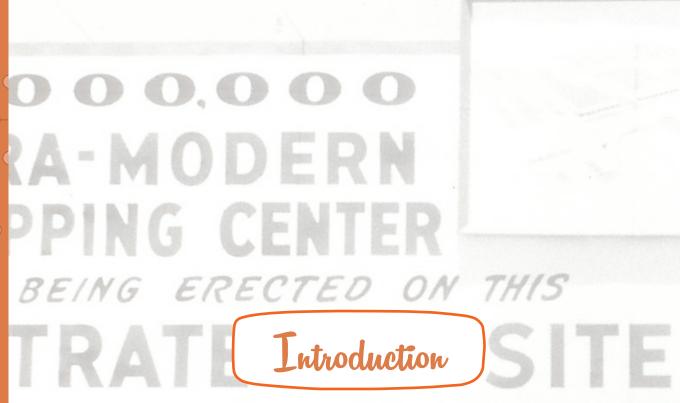
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Introduction

Original Thornton represents a development pattern and style similar to other Denver metro suburbs of the era. Original Thornton is an interesting neighborhood that continues to attract newcomers. Its defining character, from the streetscapes, individual homes, to the brick details, has served long-time residents well and continues to attract newcomers. This Pattern Book was born out of a desire from the City of Thornton to better understand what makes the neighborhood special so that those characteristics can be valued and maintained.

This is a book of ideas, inspiration and encouragement. The recommendations included here are only suggestions, and it is not intended as a critique of previous alterations made to homes in Original Thornton. There are currently no guidelines regulating the treatment of these homes, but a common understanding of the neighborhood's key characteristics. A commitment to honor those characteristics can support the on-going success of Original Thornton.

The Center of Preservation Research (CoPR) is a University of Colorado Denver research center dedicated to the study, preservation and sustainable use of the built environment and cultural landscapes. CoPR explores the past to understand the present, and provides a basis for future informed decision-making.

Research Methodology

In collaboration with the City of Thornton to create the Original Thornton Pattern Book, CoPR first surveyed the neighborhoods by driving through to get a general feel for each area. CoPR then walked through the neighborhood to identify the character-defining features of the area and the different models and their variations. CoPR then researched and developed the historic context of Thornton.

CoPR developed design options by first measuring and photographing three different homes. Based on the models, variations, and character-defining features identified, CoPR developed suggestions for homeowners on how to adapt their homes by utilizing previous research and best practices developed over the years by the National Park Service, History Colorado, and other preservation organizations and experts.





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B. O O O, O O O TRA-MODERN OPPING CENTER BEING ERECTED ON THIS STRATEGIC SITE PER DRUG GAS BARBER BAVERY SHOE DRY CHI TO STORE TATION SHOP DE STORE DRY CHI TO STORE TATION SHOP DE STORE DRY CHI TO STAIL BEWELLS

ABOVE: Thornton shopping center groundbreaking.

Original Thornton Historical Context

Built in response to a post-war housing shortage in Denver, the community of Thornton evolved from a farm field populated by jackrabbits, prairie dogs, and coyotes to a community of around 10,000 residents in just two years. Developer Sam Hoffman envisioned his new housing subdivision as a complete community. A skilled promoter, Hoffman marketed his vision, and then relied on homeowners to make it a reality. Thornton's early residents bought from Hoffman because he offered houses they could afford. It would take several years of work to make Thornton the complete city Hoffman envisioned.

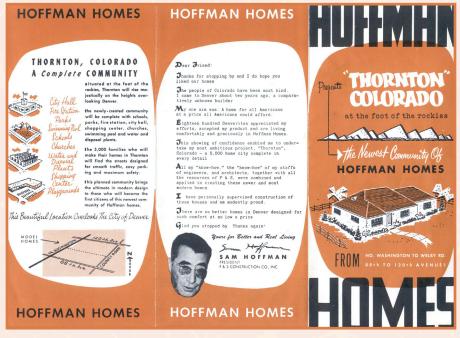
Post-war developers like Hoffman introduced a new model of large scale suburban development. With limited resources available for new construction during the Great Depression and World War II, followed by a post-war Baby Boom and expanding Denver economy, housing was in short supply. Developers introduced mass construction techniques, simplified designs, and new materials in order to build houses at an unprecedented rate. Denver expanded its borders to incorporate new housing developments, and nearby small towns such as Littleton, Arvada, and Aurora quickly grew into sprawling suburbs. Hoffman's first Colorado development, Hoffman Heights was located just east of Denver in Aurora. Hoffman selected a location just outside the city limits in anticipation of future annexation, but faced opposition from Aurora which did not have confidence in the project. Aurora posted a billboard across from model homes warning "No police or fire protection furnished east of this sign." For his next project, Hoffman wanted to create his own community.

F&S Construction Company

Born in Russia, Hoffman immigrated to the United States after the Bolshevik Revolution. Settling in Detroit, Hoffman worked as a plasterer until the crash of 1929 halted many construction projects. He then started a trucking business with his brothers. Hoffman moved to Phoenix after the war and established F&S Construction. Standing for father and son, the company was operated by Sam, his son Jack, and his two son-in-laws, Sol Dichter and Bob Rossner. Between 1947 and 1953, F&S Construction built 9,600 homes in Phoenix, Tucson, Denver, Cleveland, Pueblo, and Albuquerque.

Business Week published a profile of Hoffman on July 25, 1953. The article named Hoffman the third largest builder in the U.S. in 1954 with 2,858 homes currently under construction. Advertising his developments through newspapers, radio, and television, as well as model home tours, Hoffman's homes were usually sold before they were completed.

F&S Construction's success was based on its ability to build affordable housing within reach of the masses. According to Hoffman: "Frank Lloyd Wright says he builds houses around the personalities of the people who live in the house. I build houses around the pocketbooks of the people." Prices for a four-bedroom home in Hoffman's developments started around \$9,000 and prices for three-bedroom homes started at \$8,000. Hoffman also offered financing options to make his houses more accessible. A down payment for a \$9,000 house was just \$586 with monthly payments of \$70 for twenty years. F&S Construction took mortgages on the homes and then resold them to New York banks. Loans from the Federal Housing Administration (FHA) and Veterans Administration (VA) also made purchasing a home possible for many who would not otherwise have been able to afford one.



HOFFMAN HOMES

The original Hoffman Homes brochure for his new community of Thornton.



ABOVE: Members of the public lined up to see the new Hoffman Home models on opening day.

Hoffman named himself the Henry Ford of home construction, adapting assembly line methods for home building. Under Hoffman's system, each worker specialized in just one job such as laying baseboards, erecting partitions, or plastering. Workers moved from lot to lot completing the same task. According to Hoffman, "The baseboard man becomes a skilled mechanic, a machine. He puts on baseboard twice as fast as anyone else." Original Thornton resident Bernice Molter described the process: "It was kind of an assembly type thing rather than just building one house at a time. He would have a crew that would pour the foundation, a crew that put in the wiring and everything, a crew that put up the walls, and crews that would come in and do the plumbing."

The large scale of construction was essential to Hoffman's business model, enabling Hoffman to negotiate discounts for materials, get favorable financing, and keep a year-round staff of essential employees. Hoffman made less than five percent profit per house but relied on the volume and speed of construction for financial success. According to Hoffman, "I want fast nickels, not slow quarters." Multiple projects

ongoing across the country was also key. Said Hoffman, "No city can absorb as many houses as I want to build in the price range I build them. The market just dries up."

In order to keep costs low, Hoffman located his projects on the outer edges of metropolitan areas where he could find cheap land. In Salt Lake City, Hoffman purchased land about 16 miles southwest of the city. Said Hoffman, "Some people said it wouldn't work, that the location was bad. But I build enough houses so that we can make a nice community any place."

Selling Thornton

On December 24, 1952, the Denver Post announced "a complete new city of 5,000 homes—including a civic center, shopping center, schools, playgrounds and parks—will be built north of Denver next spring by the F&S Construction Company." The new city would be located on 640 acres of farmland which Hoffman purchased from Art Eppinger for \$250 per acre. Hoffman decided to name the new community Thornton, in honor of Colorado's current governor, Dan Thornton. The Denver Post described the project as "the most ambitious ever attempted in Colorado . . . second in size only to Pittsburgh's mammoth 18,000 Levitt Town project in Pennsylvania." According to Hoffman, the project represented his "deep faith in Denver's future. It represents, also, a cognizance of the desperate need for moderate-priced housing in the Mile High city."

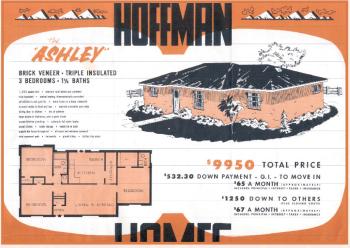
Hoffman's remarkable speed of construction was evident in the erection of model homes to market the new community. Crews broke ground for three model homes on April 2, 1953, and the homes were ready (and decorated) for a grand opening ceremony on April

19th. Hollywood icon Jane Russell designed the interiors of two of the houses, helping to promote the company for which three of her brothers worked. She chose the Southwestern style. According to Russell: "I was thinking Colorado, it's a little bit like New Mexico, so we did it in that vein." She also attended the grand opening, greeting guests and posing for photographs and helping to draw an estimated crowd of 6,000 to see the three isolated homes in the midst of an open field. Governor Thornton also attended the opening.

Initial models offered included the Arden, Clayton and the Ashley. The two-bedroom Arden advertised for \$8,000 with a \$650 down payment and monthly payments of \$57. The three-bedroom Ashley advertised for \$9,850 with a \$1,250 down payment and a monthly payment of \$67. Taking advantage of the housing aid provided by the GI Bill, veterans could move in with a down payment of just \$532.30 and pay only \$65 per month.

Hoffman had a grand vision for his farm field, marketing it as a complete city with a projected population of 20,000. According to advertisements:

"A Complete Community situated at the foot of the rockies, Thornton will rise majestically on the heights overlooking Denver. The newly-created community will be complete with schools, parks, fire station, city hall, shopping center, churches, swimming pool and water and disposal plants. The 5,000 families who will make their homes in Thornton will find the streets designed for smooth traffic, easy parking and maximum safety. This planned community brings the ultimate in modern design to those who will become the first citizens of this newest community of Hoffman homes."



ABOVE: Hoffman Homes Advertisement featuring the "Ashley" Model.



ABOVE: Actress Jane Russell showed up to help market Thornton (her three brothers worked for Sam Hoffman).

The fact that the complete community was not yet a reality became a problem for buyers wanting to get a Federal Housing Administration (FHA) home loan. In June 1954, the FHA decided not to approve loans for houses in Thornton, citing multiple concerns with the new development including water supply, isolated location, and lack of community services and amenities. According to the head of FHA in Colorado, he had no concern with the quality of the homes, which appeared to be well-built. But Hoffman was "building an entirely new city out there, representing a far different type of risk than we've insured before in Colorado. I just feel the important elements are lacking as of now." The FHA argued that those receiving FHA loans should be able to assume that there would be satisfactory utilities, public transportation, schools, churches, shopping centers, and other amenities as well as "a degree of attractiveness to provide long-term marketability." F&S Construction returned deposits to around 100 families who had been waiting to get loans.

This rejection, however, did not bother new Thornton resident Mrs. Lee Manning, who felt confident that Hoffman would follow through on promises for amenities. Manning told the Denver Post, "Frankly I don't think the FHA is big enough to stop Sam Hoffman—we will have our town with or without the FHA." Another resident, Mrs. David Flood, told reporters "we like it here and we like the house—it's the best we could find for the money." Mrs. Flood argued that Denver contractors had likely influenced the FHA decision, since "every 1,000 homes sold out here in Thornton means just 1,000 that aren't sold in Denver."



ABOVE: Map showing the year the homes were built in the Russell/Clayton area on Clarkson Street. Location of Original Thornton Model Homes depicted in red.

Thornton Grows

Thornton's first families moved into their Hoffman Homes in January 1954. The official first family was Robert and Majorie Glassman. The couple was so excited to move into their new home that they moved at night, using a hired truck and assisted by family and friends. There were no streetlights yet in Thornton, and Robert Glassman tripped in the dark and broke his arm.

Many of Thornton's early residents were veterans drawn to Thornton because the houses were more affordable than those in Denver. Among them was Thomas McNeely, who worked at Rocky Mountain Arsenal. He told the Rocky Mountain News: "We moved out here a year ago from Denver. I've been nothing but busy ever since. I've got no complaints with it, I guess... it's convenient to my work, it's quiet." While F&S Construction built the houses, Thornton's new residents had to work to create a city. Residents initially relied on Adams County services. A community association was formed, but with no taxing authority or dues, it had to rely on donations for services like paying the street lighting bill. The association organized a house-to-house campaign to raise money to purchase a used fire truck from Denver. Donations also funded local police.

According to Oyer Leary, an early resident and Thornton's first mayor: "It didn't take me long to realize the county might be fine for rural areas, but it couldn't provide municipal services." The first effort to incorporate Thornton in August 1955 was rejected by voters, but incorporation passed in August 1956.

The Rocky Mountain News described the new city as "conceived in exasperation and born in debt. Exasperation because Thornton was the size of a city, had the population and problems of a city—but lacked a city's legal regulation and self protection. Debt, because

one of the town's first acts was to assume financial liabilities of its volunteer fire department." The Denver Post reported on Thornton's "make-believe officials." With incorporation, Thornton officially got a fire department, a city marshal and a police magistrate . . . but the fire department doesn't have an engine in operation, the marshal, has no city ordinances to enforce, and the magistrate has no jurisdiction." Though the new city including taxable property assessed at more than \$10 million, the city could not start collecting taxes until the following year. Instead, the city relied on licenses and permits for revenue which did not produce enough to pay salaries. The mayor and councilmen were not paid, volunteer police used their personal vehicles, and the city clerk and magistrate used their homes for city hall and traffic court.

According to Leary: "We literally had to start from scratch in providing a city government. We didn't even have a way of providing for the basic utilities. We had no laws and, in our first year, we had to pound out something like sixty basic ordinances. We had to operate with volunteer, unpaid help. We met in shacks or basements or living rooms. Our clerk had to keep the city records under the couch in her living room."

The homes offered in Thornton continued to evolve as the city grew. Hoffman started offering options with basements, which were not available for earlier models. A 1958 advertisement promoted three models, all offering three bedrooms and zero down payment for veterans. The Imperial (1,134 sf on the first floor), cost \$11,750 without a basement and \$12,500 with a basement. The Monarch (around 1000 sf on the first floor), cost \$10,500 with a basement. The Fleetwood (1460 sf on the first floor) cost \$13,250 without a basement and \$14,250 with a basement.

Thornton Timeline

December 24, 1953

Sam Hoffman announces plans to build "Colorado's newest city."

February 19, 1953

Sam Hoffman announces that the city would be named Thornton after current governor Dan Thornton. According to Hoffman: "Dan deserves the honor in view of his part in building the State of Colorado and his interest in adequate housing for its citizens."

April 2, 1953

Groundbreaking ceremony for model homes. Sam Hoffman and State Senator Clifford Gobble turn the first shovel of soil.

April 19, 1953

Grand opening of three model homes with Hollywood star Jane Russell and Governor Dan Thornton in attendance.

May 1953

Sewage plant under construction.

September 1953

Thornton's first 30 homes under construction.

January 31, 1954

Ceremony to celebrate the first 30 families moving into their • new homes in Thornton.

June 1954

F&S Construction completing six homes a day in Thornton.

July 1954

Groundbreaking for \$3 million shopping center and an elementary school.

July 1954

Bus service between Thornton and Denver begins.

March 24, 1955

The Rocky Mountain News describes Thornton: "Colorado's newest city . . . Huge clusters of pretty new brick bungalows clinging to the hillsides overlooking the valley of Clear Creek north of Denver . . . already, 5120 people living where but two years ago cattle grazed in peace."

August 16, 1955

Majority of residents vote against incorporation of Thornton.

August 1955

Groundbreaking for Mountain View Lutheran Church.

January 1956

2,000th family moves into Thornton, which is now the 19th largest city in Colorado.

March 1956

Thornton's volunteer fire department fundraising campaign to purchase an old Denver fire truck.

May 26, 1956

Majority of residents vote for incorporation of Thornton.

May 1956

Thornton population reaches 8,640.

August 11, 1956

Thornton elects its first mayor, Oyer G. Leary. The twenty-nine-year-old lawyer was a World War II veteran. Leary promises adequate fire protection and the construction of the city's first building to hold the city hall and fire department.

November 1956

2,300 houses in Thornton.

January 1957

Groundbreaking for Thornton's municipal building.

August 1957

Thornton swimming pool opens.

December 1957

Thornton City Council hires first full-time police chief.

February 1958

First mass at Holy Cross Catholic Church.

November 1958

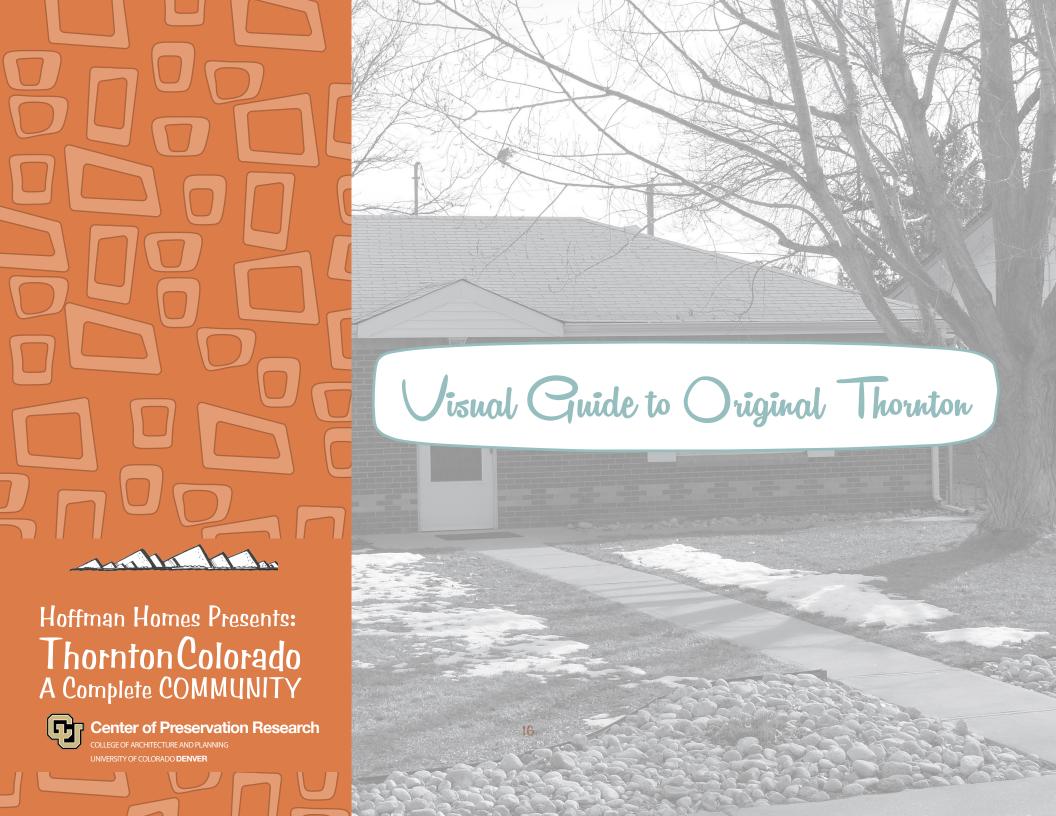
Dedication of Thornton Church of Christ.

January 1959

Groundbreaking for Thornton Presbyterian Church.



ABOVE: Hoffman Homes Advertisement from 1958.



Midcentury Housing Design

America faced a severe housing shortage in the late 1940s and early 1950s. Few new houses had been built during the Great Depression and World War II. Returning veterans were marrying and starting families, creating additional demand. Architects and developers looked for ways to apply the mass production techniques developed during the war to the peacetime housing industry. Under the G.I. Bill, the government offered housing loans to veterans, but limited the price range and size of qualified housing. These pressures resulted in the development of compact and economical designs that could be erected quickly.

MIDCENTURY DESIGN ADAPTATIONS

Midcentury design adaptations included:

- Eliminating basements and building directly on concrete slab foundations
- Standardizing window and door sizes
- Centralizing plumbing
- Eliminating second stories and staircases
- Using minimal decoration
- Creating an open floor plan to maximize space
- Creating a combination living/dining room that opens onto the kitchen
- Minimizing hallways
- Using large windows and patio doors to connect the house to the outdoors in order to make small houses feel more spacious

MIDCENTURY HOUSING TRENDS

Midcentury housing trends included:

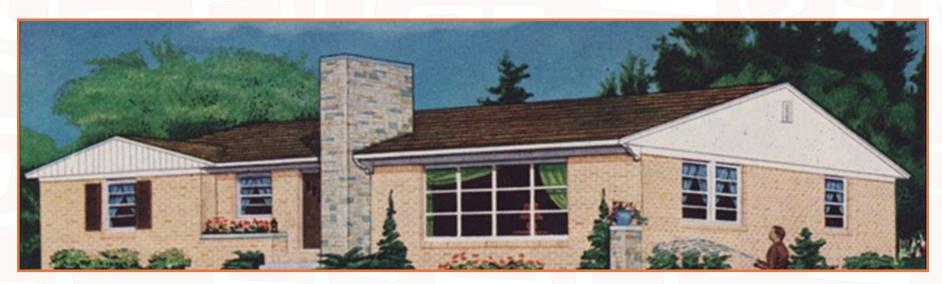
- Kitchen becomes central feature of home
- Flexible spaces
- Layout was open and casual, with wood paneling instead of wallpaper, and room dividers instead of interior walls
- Informal design to promote a relaxed, easy lifestyle
- Increasing emphasis on outdoor living space including backyards and patios

THE RANCH STYLE

The Ranch House was inspired by the vernacular architecture of California ranches, and is often referred to as the California Ranch. The Ranch House design or post-war "dream home" is generally attributed to the architect Cliff May.

The ranch house features include:

- All rooms on one floor
- Gable or hipped roof
- Deep roof overhang
- Low to the ground
- Eliminated steeply pitched roofs and Dormer windows
- Large picture window facing the street
- Set parallel to the street
- Modest detailing



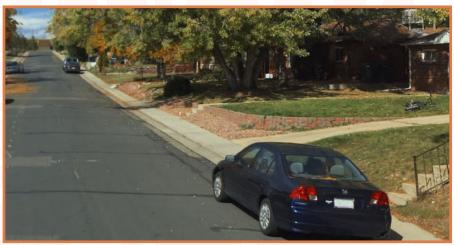
Original Thornton Features

NEIGHBORHOOD PLANNING

- Houses feature a fairly uniform setback from the street
- Limited number of models available but sense of variety enhanced through asymmetrical facades, varied roof lines, hipped and gabled projections, and setbacks
- Curvilinear streets and cul-de-sacs designed for pleasing appearance as well as slowing down traffic
- Average lot size 65' to 70' wide and 105' to 115' deep
- Parkway (Hoffman Way) runs diagonally through the subdivision
- Lots for churches, schools, and swimming pool integrated into subdivision plan, many located along central spine of Hoffman Way
- All homes feature concrete driveways
- Some homes have alley access
- Varied brick pattern used as decorative feature











LANDSCAPE

- Landscaping on midcentury homes is generally minimal
- A grass lawn primary feature
- Lawn can be accented with low shrubbery, a few trees, or flower beds
- Front lawn designed to be open, public space while the backyard is private space, no vegetation obscuring the facade
- Fencing is commonly used to enclose the backyard
- Landscaping can be used to accent the features of the home
- Keep landscaping informal an plantings next to the house low so the features of the house can be seen

ROOFS

All homes in Original Thornton featured single story designs with a variety of roof types.

- Hipped roofs with inclined ends and sides with two sloping sides and a gable at each end
- Gable roofs
- Varied roof lines
- Low to medium pitch
- Deep overhangs
- Strong horizontal emphasis
- Typically asphalt shingles









2WODNIW

- Original windows metal-framed casement windows
- Houses feature a mix of window configurations and sizes including smaller horizontal windows and larger square windows
- Houses feature a large picture window looking out onto the front yard
- Original window is three-part with a central single-pane portion framed by four-light sections

BRICK

- Wide variety of brick colors used, including red, brown, and tan
- Most homes feature multiple, contrasting brick colors
- Windows feature brick sills
- Many houses feature decorative brick patterns







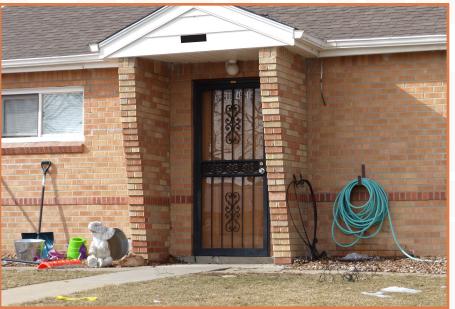
COMMON MIDCENTURY ADDITIONS

Many homeowners have adapted their houses, reflecting both practical needs and personal style. The neighborhood includes many mid-twentieth century alterations completed soon after the houses were completed. These early alterations incorporate popular midcentury materials and designs.

- Porches with decorative iron posts and railings
- Metal awnings
- Wood shutters
- Carports







Models Available in Thornton

MODEL 1



MODEL 6



MODEL 2 (ASHLEY)



MODEL 7
(ARDEN)



MODEL 3



MODEL 8



MODEL 4



MODEL S (CLAYTON)



MODEL 5



- Four bays wide bays are a repetitive vertical subdivision of an exterior facade typically defined by wall openings
- Off center entrance
- Irregular plan
- Two hipped roofs
- Primary hipped roof features a short roof ridge
- Secondary hipped roof has a longer roof ridge and is set back to the side

OFF CENTER ENTRANCE

SHORT ROOF RIDGE

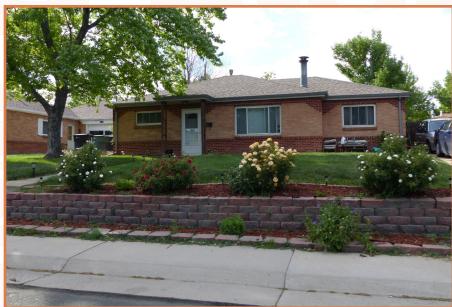
TWO HIPPED ROOFS











MODEL 2 (ASHLEY)

- Four bays wide
- Off center entrance
- Irregular plan
- Two hipped roofs
- Primary and secondary hipped roof have similar length roof ridge
- Secondary hipped roof set back to the side
- Some homes include a hipped projection on the facade on the opposite side from the secondary hipped roof

HIPPED ROOF PROJECTION OFF CENTER ENTRANCE

HIPPED ROOF







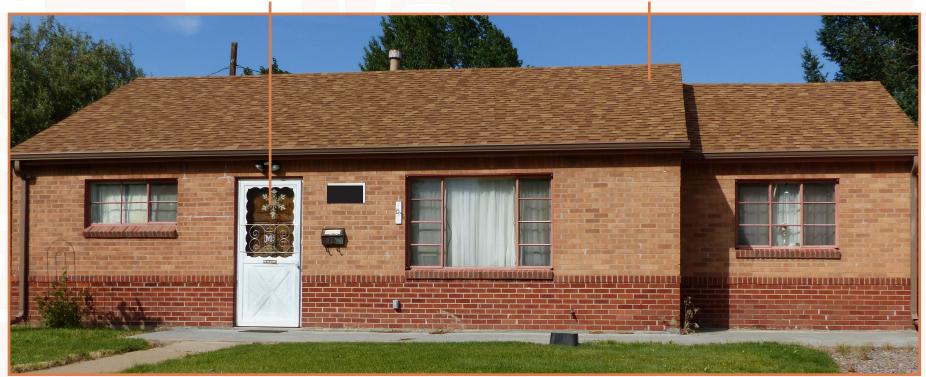




- Four bays wide
- Off center entrance
- Irregular plan
- Two side gable roofs
- Secondary gable roof set back to the side, roof ridge lower than primary roof creating a telescoping effect

OFF CENTER ENTRANCE

TWO SIDE GABLE ROOFS











- Four bays wide
- Off center entrance
- Rectangular plan
- Hipped roof
- Uneven roof ridge with two ridges of roughly equal length, but varying height
- Section of roof above the front door features taller roof ridge

OFF CENTER ENTRANCE

UNEVEN ROOF RIDGE

HIPPED ROOF



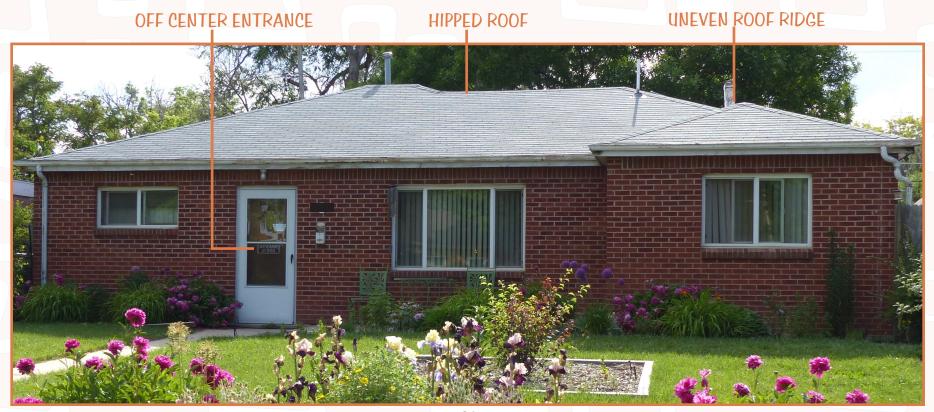








- Four bays wide
- Off center entrance
- Irregular plan
- Hipped roof
- Uneven roof ridge with shorter, taller section of roof ridge located above the entrance
- Hipped projection on front corner opposite from the entrance
- Some houses feature a small gable over the entrance











- Four bays wide
- Off center entrance
- Rectangular plan
- Hipped roof

OFF CENTER ENTRANCE

HIPPED ROOF











MODEL 7 (ARDEN)

- Three bays wide
- Off center entrance
- Hipped roof
- Optional hipped roof projection on front corner adjacent to entrance
- Rectangular and irregular plans depending on inclusion of hipped roof projection

OFF CENTER ENTRANCE

HIPPED ROOF











WODEL &

- Three and four bay options
- Off center entrance
- Rectangular plan
- Side gable roof
- Variation with small gable over the entrance

OFF CENTER ENTRANCE

SIDE GABLE ROOF











MODEL 9 (CLAYTON)

- Four bays wide
- Off center entrance
- Side gable roof
- Irregular plan
- Drop in height of roof ridge at one end
- Front gabled projection at section with lower roof ridge

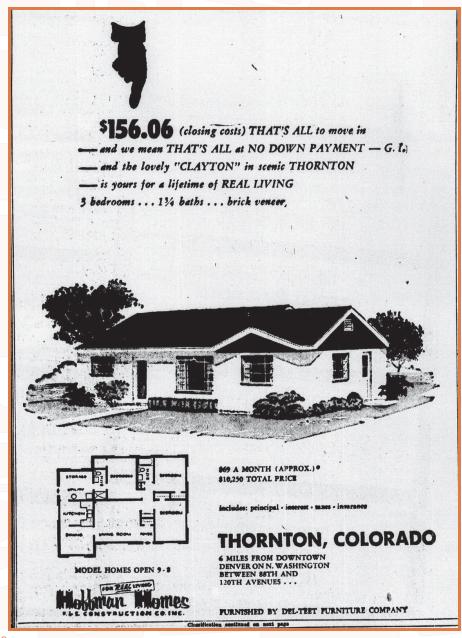
OFF CENTER ENTRANCE

SIDE GABLE ROOF













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Center of Preservation Research

COLLEGE OF ARCHITECTURE AND PLANNING

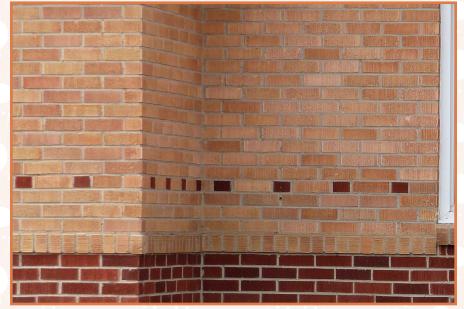
UNIVERSITY OF COLORADO **DENVI**



Exterior Materials

Thornton homes originally featured decorative brickwork of various patterns and multiple colors. Though a few houses in Thornton have now been painted, the neighborhood maintains a relatively intact exterior masonry character. Masonry should be repaired and repointed by a qualified mason. Covering the walls with horizontal siding, vinyl siding, stucco, or stone is not compatible with the historic character of Thornton. These materials should never be used to cover up masonry deterioration as significant damage can occur underneath the new materials.





Windows

The original windows were single-pane aluminum frame windows. Operable windows were primarily horizontal sliding windows. Retention of the original windows is preferred; energy efficiency can be improved with the installation of a second pane of glass detailed to work with the original frame, or as a storm window on the exterior or interior. Aluminum window frames can now be thermally broken (with air between double panes stopping the conductive thermal energy from passing through the glass), greatly improving the resistance to condensation and the feeling of cold frames. If replacing windows, the original window configuration should be retained. Fake mullions or other window divisions are not suitable. Fiberglass frames matching the original window dimensions can be explored as an alternative to aluminum windows. Vinyl windows are not an appropriate choice the thickness of their frames and the textural quality and surface finish of the material is not compatible with the historic character of Thornton homes. Many of the homes have had their windows previously replaced.





Environmental Concerns

Older homes may have lead and asbestos in materials you may not suspect. Before undergoing any renovation project, have your materials checked out by professionals to avoid any health hazards.

Energy Efficiency

Although most homeowners want to improve the energy efficiency of their home, energy efficient upgrades in mid-century modern homes require extra caution. To preserve the original design intent, alterations should only be considered when they will significantly improve efficiency. Heating, ventilating, and air conditioning upgrades can generally be done with minimal impact on the character of the home. Super high efficiency furnaces, reduction of heat duct loss by insulating and sealing ducts, providing ventilation in bathrooms and kitchens, and installing energy efficient appliances are all upgrades that can make significant impacts to the efficiency of the home without altering its character. Whole house fans for continuous ventilation can supplement ventilation and cooling. Insulating wood framed walls is not recommended because the costs are high, the potential for damage to the building materials is higher, and the potential benefit is negligible. Insulation should not be installed unless a vapor barrier has been installed, and this can generally only be done if the brick masonry is removed, which is also not recommended. Insulation can be installed under floors and on the roof to improve the envelope. Solar panels are typically not considered appropriate on buildings with low-pitched roofs as they are quite visible due to the angles required for installation and effectiveness.



Roofing

Homes in Thornton originally featured an asphalt shingle roof. Asphalt shingles were popular in the 1950s and were the roofing materials for Original Thornton. 12-inch by 36-inch multi-tab flat shingles were most prevalent at the time. Roof replacement is a necessary maintenance every 20 years or so depending on weathering, hail damage, water damage, etc. Appropriate replacement materials include low profile asphalt composition shingles in a variety of compatible colors. Many of the roofs of the 50s were in the blue-grey range, but any natural or earth toned colors would be appropriate. When installing a new roof, energy efficiency can be improved by filling rafter cavities with high density closed cell foam and then re-decking.







Landscape

In terms of landscaping, think minimal and think sustainable. Houses in Thornton originally featured grass lawns enhanced with trees and shrubbery. There are many styles of landscaping and many plants that are fitting for the mid-century house. Historic house catalogs have exterior images that can give inspiration. Modern landscapes with simple and textured plantings or Asian-influenced landscaping are two popular and proper options. Many original plantings are overgrown after 60 years and require extensive trimming or removal. Foundation plantings are appropriate, but they should be scaled correctly and layered with lower plantings in front of them. The landscaping should never obscure the house. Ideally, the landscaping will enhance the connection between inside and outside.







Sensitive Adaptations

Thornton homes present several challenges for current owners. Housing expectations have changed significantly since the mid-1950s, especially when it comes to space. Master suites, large kitchens, open plans, two-car garages, and plentiful storage have all become standard. Balancing the need for up-to-date amenities with the desire to retain the historic character is challenging, but can be done.

The houses of Thornton have evolved over time, reflecting changing tastes and trends. Some of the common changes include: adding a garage or carport, replacing the original windows, building additions or pop-tops and interior modifications.

WHENEVER POSSIBLE

- Retain the historic character of the home
- Avoid the removal of distinctive materials, features, and spatial relationships
- When original materials cannot be retained, replace them with new materials matching the original in design
- Avoid changes that create a false sense of historical development, such as adding features or elements from other styles or periods
- Additions should be subordinate to the original building, be compatible in scale and proportion, and retain original spatial relationships

Additions

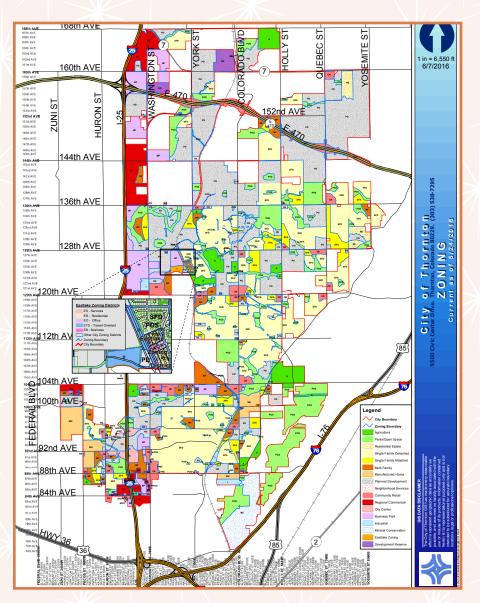
Many of Thornton's homes have been expanded beyond their original footprints. Consider these suggestions when expanding a home to retain its historic character:

- Additions should use similar, compatible materials to the original house. Brick is ideal. The walls of the addition do not have to match the original, but they should blend with it.
- Additions should be modern in form and detailing.
- Additions should use similar window types to those on the original house. Windows should be placed in organized patterns and not randomly scattered.
- Additions should have roof lines similar to the original roof pitch and character.
- The most appropriate placement for additions is at the rear of the property. Lots in Thornton vary widely in dimension, with some allowing for more space for rear additions than others. Side additions can be appropriate if set back slightly from the main façade.
- Retain the irregular footprint of the house, especially on the façade. The stepped facades of the houses in Thornton are an essential part of the historic character, adding variety and depth. If you construct an addition on the side of the house, it should be set back from the façade.



Additions - Zoning

Thornton's Zoning Code is based on the concept, like most zoning codes, that different property types have different characteristics. Zoning defines many aspects of a property and its development such as size and location of structures, allowed uses, required parking, lot shapes, and block patterns. The Original Thornton homes are located within the Single-Family Detached (SFD) zoning district and has a minimum lot size of 6,000 square feet. Current regulations for the SFD zoning district require a front setback of 20 feet (15 feet for a porch), side yard setback of 10 feet and a rear yard setback of 20 feet. There is also a maximum building height of 35 feet. While the zoning allows for multi-story homes, the Original Thornton homes were onestory in height and adding a second story will be difficult (See Adding a Second Story). Before starting any addition or remodeling project, talk to the Planning and Building Departments. They can give you the requirements for your project, guide you through the process, and even give you suggestions that will make the process and outcome better.



Carport or Garage

In Original Thornton, there were very few garages or carports in the design of the houses. One of the most common alterations in Original Thornton is the addition of a carport or garage. Since garage doors are not part of the original design, the material of the door should be simple and blend with the rest of the house as much as possible. The garage door can be up to a third of the front façade, but should not be the most prominent feature. In order to retain the original character of the house, the irregular footprints and setbacks of the original designs should be retained.











Adding a Second Story

Due to the low profile of Thornton homes, it is very difficult to construct a second story addition that fits with the character of the neighborhood and does not overwhelm the original house.

While a second story can add valuable square footage, it can change the scale and mass of the home in relationship to homes in the neighborhood. Second story additions can also negatively impact the privacy of adjacent homes.

However, with careful planning (and a larger sized lot), a second story addition that fits the neighborhood character may be possible. A half-story addition or partial second story may also be an option. An addition should follow these guidelines:

- Maintain a strong horizontal emphasis
- Be set back from the façade
- Be low in profile with a roof form that blends with the original home
- Match the original house materials and details
- Minimize second floor plate heights to maintain horizontal emphasis of the style
- Avoid second floor balconies and bay windows on side and rear elevations
- When adding a second story, when possible hide it in the roof line of the existing house

Aging in Place and Making Your Midcentury Modern House Accessible

When remodeling your home, you may want to consider your future needs as you grow older. There are several key elements to creating a truly accessible home. Thornton homes already have an advantage since they are on a single level without a basement or stairs. Movement through the house should be as open as possible. Kitchens and bathrooms often need additional space, and specific designs to work for homeowners with differing abilities. Kitchens and bathrooms can have variable height countertops, low appliances and roll-in access, all of which can be done in harmony with the mid-century modern interior.

The biggest challenge is generally entering the house. Modifications can fairly easily be made to the side. The entrance from the street to each house is unique due to the topography of the specific site, but gentle ramping from sidewalk to entrance is the ideal solution if possible.

NOTE: Images are for representation only of accessibility design strategies.





Site & Landscape Features

Open front yards with modern landscaping features are ideal. Plantings should not obscure the house. Fencing should be integrated with the rest of the house and should follow the original footprint. Fences should be simple and modern in appearance. Fences with a vertical emphasis are ideal, but modern wood horizontal fencing could also be used. Using decorative or lattice fencing detracts from the minimalist style of the house and should be avoided. The addition of decks and fencing in the front yard should also be avoided. Concrete is the most appropriate material for driveways and walks. Smooth, modern stone could also be used. Rustic stone and mountain-style wood does not fit the character of the neighborhood.



Entrances

Entry doors should be simple, without stained or decorative glass, motifs, panel trim or recessed panels. Flat slab in an accent color or flat slab with simple clear viewing panels are most appropriate. Stained wood doors do not last well in our climate due to UV rays and rain/snow weathering. Storm doors should avoid scrollwork and decorative motifs, and remain as simple and invisible as possible.



Insensitive Alterations WALL MATERIALS

The Original Thornton homes feature decorative brickwork which is unusual due to the variety and complexity of patterns seen throughout the neighborhood. This brickwork should be maintained and additions or alterations should respect the character and pattern of the material. Brick that matches the color of the original brick is often readily obtainable and a qualified mason can replicate patterning of the brickwork. Stucco, paint, and other materials that cover up or obscure the brick can lead to significant problems with the underlying brickwork. If done incorrectly, moisture can get trapped between the brick and stucco, travel into the framing causing mold and damaging the structure. The damage can cause major health and safety issues. These materials should not be used to cover deteriorating mortar joints or brickwork.





Windows

Adding picture windows, bay windows, or other large window openings can significantly alter the character of an Original Thornton home. Fake mullions or divisions are also unsuitable since these were not a feature of the original homes. The original windows were aluminum framed with narrow jamb, head, and sill profiles. Vinyl and wood windows are not a good substitute due to the thickness of their frames and their textural quality and surface finish. Stained or patterned glass, frosted glass, and glass block are also inappropriate. Bay windows and projecting garden windows should be avoided.



Window Openings

The division of the windows is an important character defining feature of the Original Thornton model homes. Windows should be rehabilitated and restored if possible. Storm windows on the interior or exterior can be added to improve energy efficiency and minimize noise pollution. If replacement is required, new windows should have the same pattern of mullions and muntins as the original to avoid the "blank stare" picture windows on the front façade. New windows that follow the example of the original windows in design and placement are recommended.



Common Zoning Issues

Since the 1950s, many Original Thornton homes have been modified or enhanced with additions or carports without valid building permits. Often, existing structures do not comply with current setback requirements found within the city's development code. This situation may be unknown and could prove problematic if the property owner wishes to complete the ideas found within the Original Thornton Pattern Book. Examples of some common zoning issues are outlined below:

CARPORTS/GARAGES

Today, a portion of Original Thornton homes have no enclosed parking spaces, also known as a garage, which presents a code non-conformance issue as it relates to parking standards. Thornton's current development code requires a minimum of four off-street parking spaces, with two of those spaces being fully enclosed in either an attached or detached garage.

DRIVEWAYS

Many driveways in Original Thornton do not comply with current code requirements. A driveway must lead to a garage or carport and cannot terminate at a living room wall. In addition, driveways may not be placed closer than three feet to the side property lot line.

PROPERTY LINES

Over the years, a homeowner's understanding of his or her perceived property lines in Original Thornton has been reshaped by overgrown planting beds, tree growth, and privacy fence placement. Fences do not always coincide with actual property lines. It is highly recommended that a homeowner obtain a site survey to confirm legal lot lines prior to altering existing or constructing any new additions, including accessory structures like sheds and detached garages.

LANDSCAPING

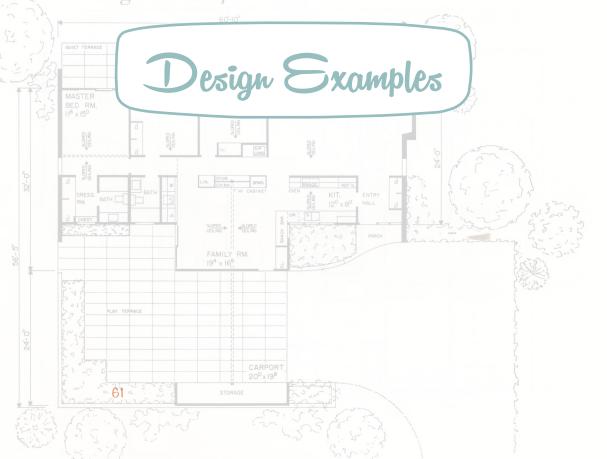
Whether you are altering your existing home or just looking to add curb appeal, landscaping in Original Thornton is something that can cause homeowners concern due to soil conditions and watering patterns. A general rule of thumb is as follows: landscaping that requires relatively heavy irrigation and lawn sprinkler heads should be located at least ten feet from foundation walls. Irrigation schemes are available which allow placement of lightly irrigated landscape near foundation walls in moisture sensitive soils. More information about landscaping techniques can be obtained by meeting with a member of Thornton's landscape architecture staff.

Consult the City

Before starting the renovation or addition process, schedule a meeting with the City Planning and Building Departments. They can help you navigate through the process and show you what you can and can't do to your house. Meeting with the City early can save you time and money.



Design X 2113/1,626 Sq. Ft./17,520 Cu. Ft.

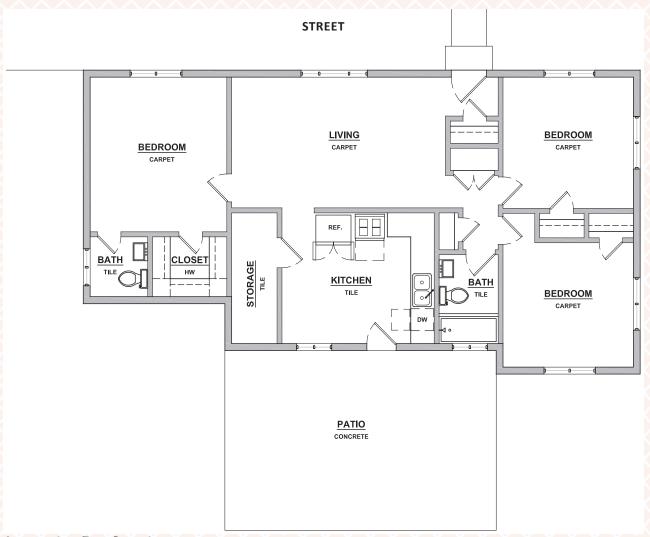


Hoffman Homes Presents: Thornton Colorado A Complete COMMUNITY



Center of Preservation Research

COLLEGE OF ARCHITECTURE AND PLANNING



As-built Main Floor Plan Model Scale 1/8" = 1'-0"



This Model is a 3-bedroom, 2-bath, single story house.

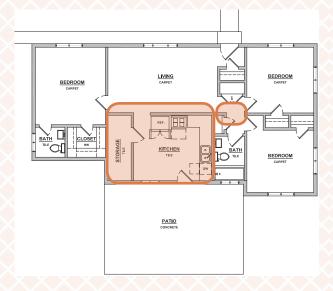
ASHLEY

OPEN PLAN LIVING

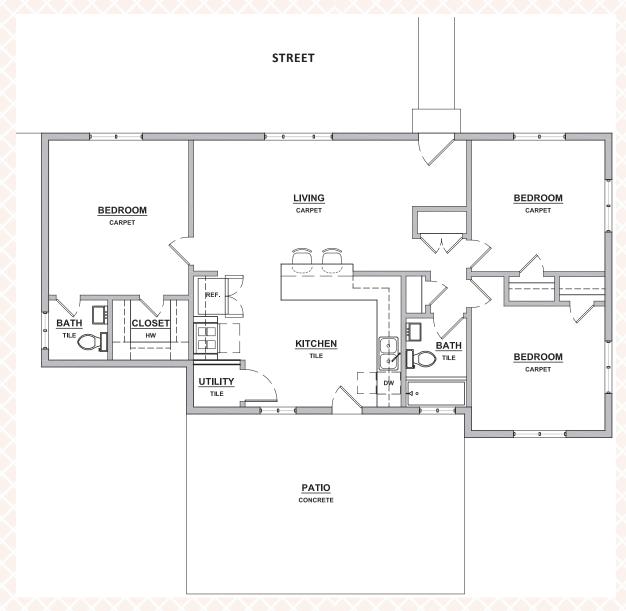
This design opens up the wall between the living room and the kitchen.

- Redesign the kitchen layout
- Create a new location for the refrigerator and range
- Enlarge the entry to the living room
- Remove front closet





As Built Main Floor Plan (not to scale)



Main Floor Plan Scale 1/8" = 1'-0"

STREET LIVING BEDROOM BEDROOM CARPET CARPET CARPET <u>BAŤH</u> CLOSET TILE KITCHEN HW **BATH** TILE **BEDROOM** CARPET LAUNDRY DINING TILE 12'-113" **PATIO** CONCRETE

Main Floor Plan Scale 1/8" = 1'-0"

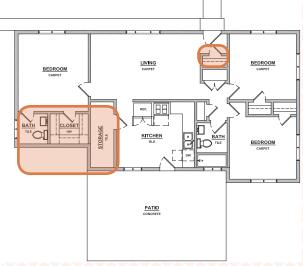
ASHLEY

MASTER BATH ADDITION

This design adds on to the bathroom creating a master suite.

- Add a shower to the 1/2 bath
- Create laundry room
- Reduce kitchen storage area
- Remove Front Closet





As Built Main Floor Plan (not to scale)

ASHLEY

MASTER BEDROOM ADDITION

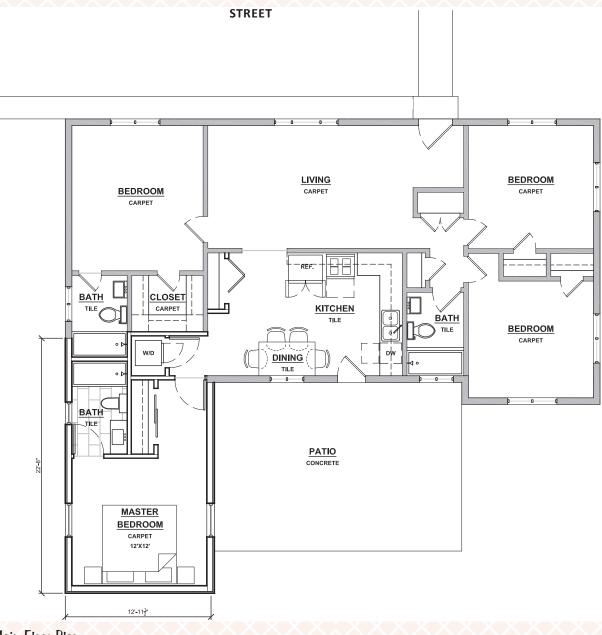
This design adds a new master suite.

- Add a master bedroom and bathroom
- Add bathtub to existing 1/2 bath
- Add laundry closet with stackable washer/dryer
- Reduce kitchen storage area
- Remove front closet

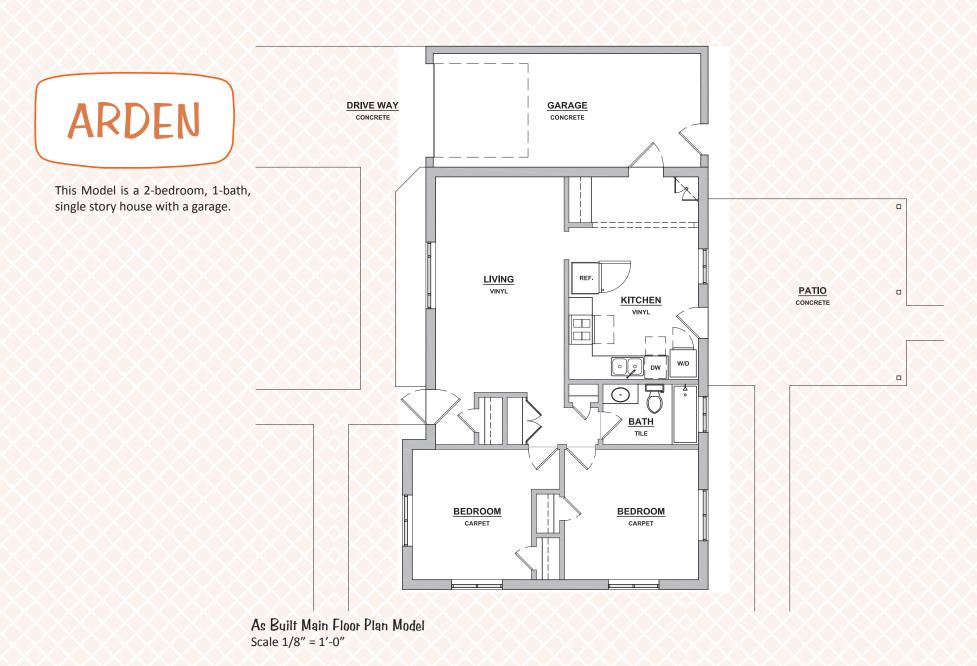




As Built Main Floor Plan (not to scale)



Main Floor Plan Scale 1/8" = 1'-0"



DRIVE WAY GARAGE CONCRETE CONCRETE LIVING REF. VINYL **PATIO** KITCHEN CONCRETE DW BATH TILE BEDROOM BEDROOM CARPET CARPET Main Floor Plan Scale 1/8" = 1'-0"

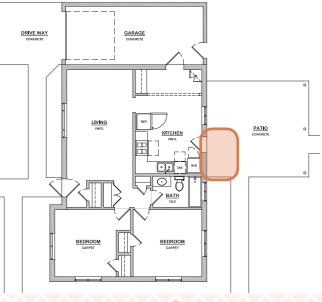
ARDEN

EN-SUITE BATHROOM ADDITION

This design adds a bathroom to the rear bedroom creating a master suite.

- Add bathroom to rear of house
- Remove existing bathroom window





As Built Main Floor Plan (not to scale)

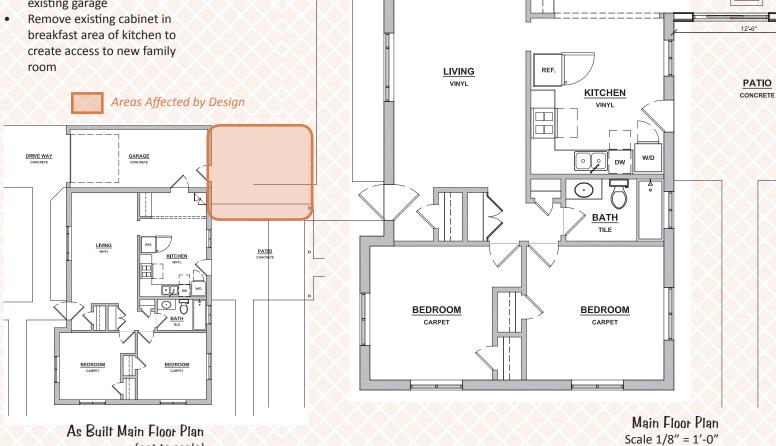
ARDEN

FAMILY ROOM **ADDITION**

This design adds a family room behind the existing garage with access from the kitchen.

- Add family room behind existing garage

(not to scale)



DRIVE WAY CONCRETE

GARAGE

CONCRETE

FAMILY

FIREPLACE

DRIVE WAY GARAGE CONCRETE CONCRETE TANDEM GARAGE DRIVE WAY CONCRETE CONCRETE 18'-6" LIVING REF. **PATIO** KITCHEN CONCRETE BATH CLOSET BATH TILE CARPET **HALL** CARPET BEDROOM BEDROOM CARPET BEDROOM NEW, ENLARGED EGRESS WINDOW Main Floor Plan Scale 1/8" = 1'-0"

ARDEN MASTER SUITE AND GARAGE ADDITION

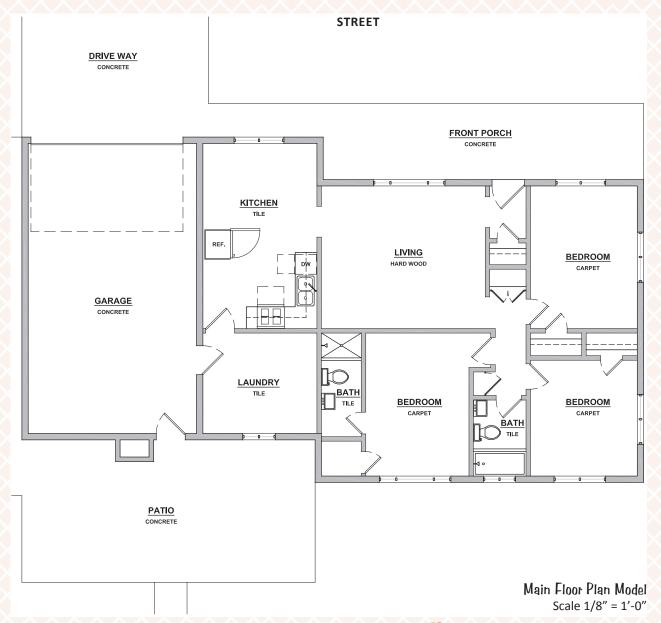
This design turns the existing garage into a tandem garage and adds a master suite to the house.

- Create a tandem garage
- Add master bedroom, bathroom, and closet
- Reduce size of second bedroom to create new hallway between bedrooms





As Built Main Floor Plan (not to scale)



CLAYTON

This Model is a 3-bedroom, 2-bath, single story house with a garage.

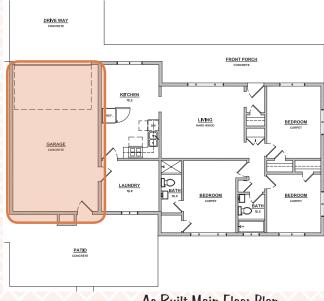
CLAYTON

GARAGE ADDITION

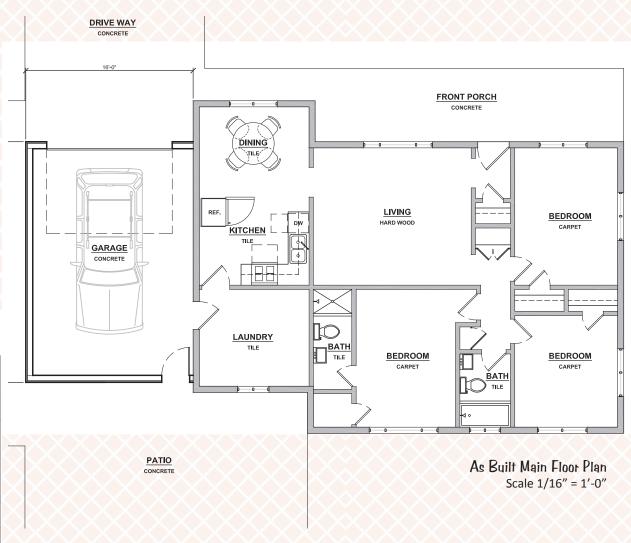
This design remodels the garage.

 Remodels garage to make it a standard size to fit modern cars





As Built Main Floor Plan (not to scale)



DRIVE WAY CONCRETE FRONT PORCH CONCRETE DINING REF. LIVING BEDROOM HARD WOOD KITCHEN GARAGE CONCRETE BATH BEDROOM BEDROOM BATH TILE FAMILY **PATIO** CONCRETE

Main Floor Plan Scale 1/8" = 1'-0"

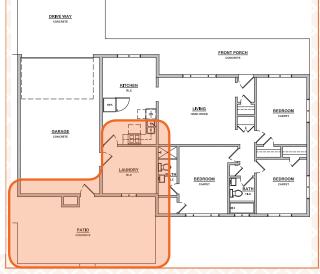
CLAYTON

LIVING SPACE ADDITION

This design converts the garage into living space by creating a master suite and family room.

- Add family room
- Add master bedroom
- Split laundry room into laundry room and master bathroom





As Built Main Floor Plan (not to scale)

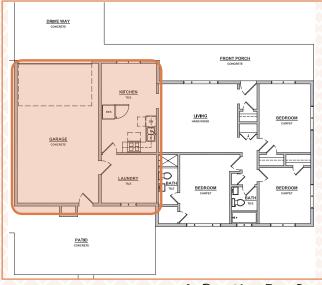
CLAYTON

KITCHEN UPDATE

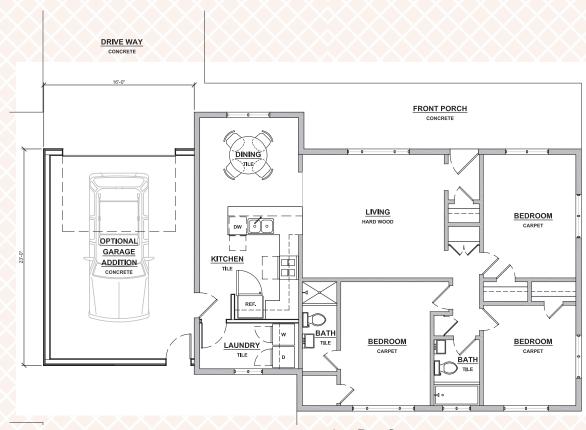
This design updates the existing kitchen.

- Open the wall between the living room and the kitchen
- Move wall between laundry room and kitchen
- Relocate refrigerator to back of kitchen and remove existing wall
- Reduce Laundry area

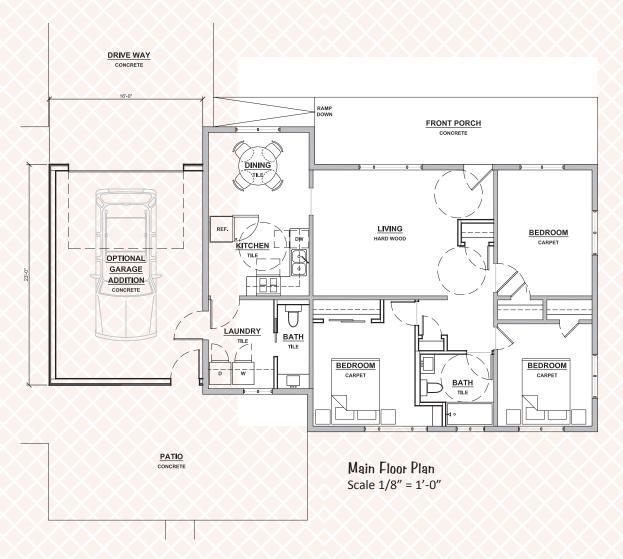




As Built Main Floor Plan (not to scale)



Main Floor Plan Scale 1/8" = 1'-0"t



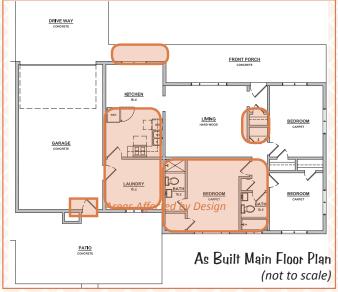
CLAYTON

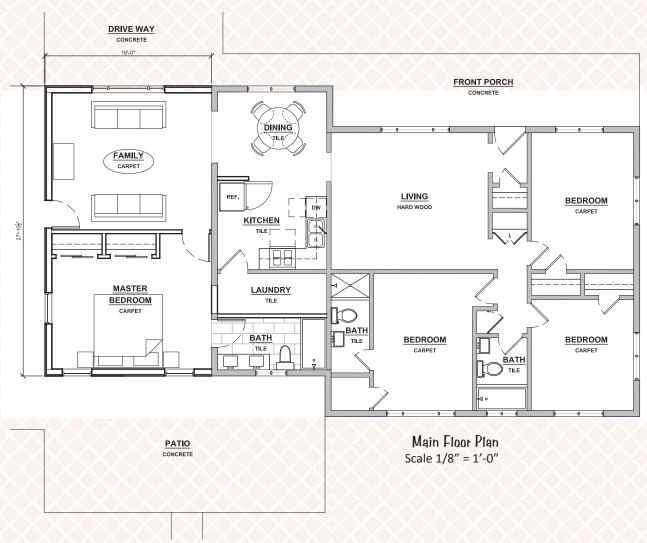
AGING IN PLACE

This design makes the house handicap accessible.

- Add ramp up to current front porch
- Add 1/2 bath to existing laundry area
- Remove wall next to refrigerator to make kitchen wheelchair accessible
- Remove front closet
- Remove existing second bath
- Make existing bath handicap accessible



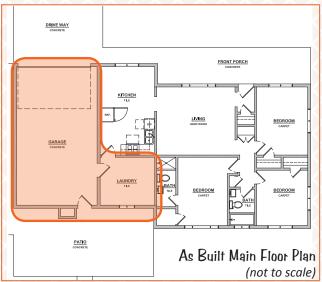




CLAYTONWHAT NOT TO DO

Using the garage as an add-on space is against code.







Conclusions KNOW ALL MEN BY TY-SE PRESENTS THAT THE -UNDERSONDED- BEING AND DO MEN-EBY RESERVE THE PROMOT TO LEAVE THE NAME OF BLOCKS 1, 2, 4 AND DO MEN-EBY RESERVE THE PROMOT TO LEAVE THE NAME OF BLOCKS 1, 2, 4 AND THE SUBDIVINE THE NAME OF BLOCKS 1, 2, 4 AND THE SUBDIVINE THE NAME OF BLOCKS 1, 2, 4 AND THE SUBDIVINE THE NAME OF BLOCKS 1, 2, 4 AND THE SUBDIVINE THE NAME OF BLOCKS 1, 2, 4 AND THE SUBDIVINE THE NAME OF BLOCKS 1, 2, 4 AND THE NAME OF BLOCKS 1, 2, 4 AND THE SUBDIVINE OF BLOCKS 1, 2, 4 AND THE SUBDIVINE OF BLOCKS 1, 2, 4 AND THE SUBDIVINE OF BLOCKS 2, 12,5 ROBW, OF THE GIT PRI, THERKE 5,50% 55.5 S. 985.00 C. S. 89°10' OC. W. 265.00 FEET; THENCE 8,095.55.5 W, 722.00 FEET; THENCE 5,00% 0.00 T. W. CONTAINING 3.124. AND THE SUBDIVINE OF SU IN WITESS WHEREOF the F & 3 Construction Company, Ric. has causher-cunto subscribed by its Vice President and its comporate seal by its Assistant Secretary, this 22nd day of January 1824

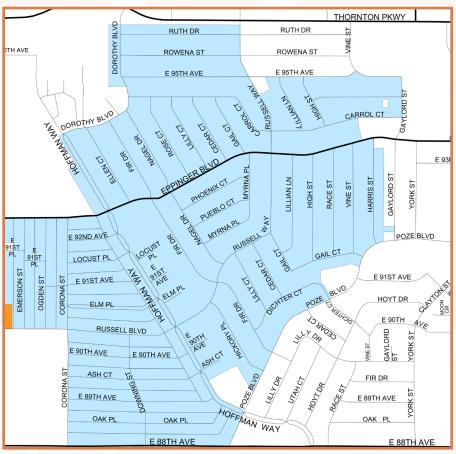
Conclusions

The Original Thornton Pattern Book was an idea first conceived in the 2011 South Thornton Revitalization Subarea Plan (STaR), which was commissioned and adopted by Thornton City Council to uplift and revitalize south Thornton. Now a reality, The Original Thornton Pattern Book satisfies an Urban Revitalization goal as noted in the 2015-2016 Council Work Plan, to "Create a pattern and design book for Original Thornton to provide options for residents to improve their homes in a way that fits with the historic context of the neighborhood."

The pages found in the Original Thornton Pattern Book offer the reader concrete examples of reinvestment ideas, a detailed architectural study, and illustrative renovation guidance that can be applied to three specific home models found in Original Thornton. This pattern book is an educational and inspirational tool intended to be used by homeowners and other interested parties as a guide to revitalizing, rehabilitating, or renovating the unique character of Original Thornton's brick architecture, while simultaneously adding value to the housing stock in Original Thornton.

There are more than 2,300 homes found within Original Thornton. The ideas presented in the Original Thornton Pattern Book may be applicable to more than 1,500 individual homes, however each homeowner is encouraged to visit with City Development Department staff before embarking on any major home renovation. Most of Original Thornton's brick homes are in excess of 60 years of age and have endured many modifications throughout the decades. A case by case review of the individual home's building inspection file and applicable planning and zoning codes is warranted before proceeding on any improvements. This proactive file review is the key to minimizing potential procedural and construction related setbacks.

The Original Thornton Pattern Book will be on display and ready for use at many city facilities, including the City Development Planning and Building Inspection counters in Thornton City Hall. It may also be available at other city facilities like the Senior Center and the Thornton Arts & Culture Center (TACC). The Original Thornton Pattern Book will be available in print and electronic formats and on the city's website.



ABOVE: Original Thornton Pattern Book Project Area; original model home locations highlighted in orange.



Resources

Before starting a project please contact the City of Thornton to discuss your project.

Thornton City Development Department - 303-538-7295

When looking for an architect or contractor:

AIA Colorado Architect Finder aiacolorado.org/resources/?rnd=5#tab-find-an-expert
State of Colorado License Lookup apps.colorado.gov/dora/licensing/Lookup/LicenseLookup.aspx
Denver Better Business Bureau - www.bbb.org/denver

Once your project has started:

For Building Permits:
Thornton Building Inspection Division - 303-538-7250

Home repair and maintenance how-to advice:

Bob Vila - www.bobvila.com
This Old House - www.thisoldhouse.com

Brick use in Denver:

The Masonry of Denver - www.masonryofdenver.com
The Summit Brick Company - www.summitbrick.com

Brick repair and maintenance:

How to Repoint Brick - www.bobvila.com/articles/how-to-repoint-brick/

Brick Basics -

www.bobvila.com/articles/370-brick-basics-maintenance-care-and-cleaning/

Brick Maintenance -

www.bobvila.com/articles/how-to-clean-brick-bob-vila-radio/

Window repair and maintenance:

Window and Weatherization Guidebook -

National Park Service Preservation Tech Notes No. 22 - www.nps.gov/tps/how-to-preserve/tech-notes/Tech-Notes-Windows22.pdf
Storm Windows - www.thisoldhouse.com/ideas/weathering-storm

www.visitahc.org/files/pdf/AHC WindowRepairGUIDEBOOK.pdf

