STARWOOD REAL ESTATE INCOME TRUST, INC. SUPPLEMENT NO. 3 DATED JUNE 9, 2025 TO THE PROSPECTUS DATED APRIL 9, 2025

This prospectus supplement ("Supplement") is part of and should be read in conjunction with the prospectus of Starwood Real Estate Income Trust, Inc., dated April 9, 2025 (as supplemented to date, the "Prospectus"). Unless otherwise defined herein, capitalized terms used in this Supplement shall have the same meanings as in the Prospectus. References herein to the "Company," "we," "us," or "our" refer to Starwood Real Estate Income Trust, Inc. and its subsidiaries unless the context specifically requires otherwise.

The purpose of this Supplement is to disclose changes to our share repurchase plan.

Share Repurchase Plan

On June 6, 2025, our board of directors amended our share repurchase plan. The amendments include, among other things, that beginning with repurchases during the month of June 2025, we limit share repurchases to 0.5% of NAV per month (measured using the aggregate NAV attributable to stockholders as of the end of the immediately preceding month), which is an increase from the prior limit of 0.33% of NAV per month. In addition, beginning July 1, 2025, the share repurchase plan has been amended such that we limit share repurchases to 1.5% of NAV per quarter (measured using the aggregate NAV attributable to stockholders as of the end of the immediately preceding quarter), an increase from the prior limit of 1.0% of NAV per quarter. As a result of these changes, the limit for the quarter ending June 30, 2025 is approximately 1.16% of the aggregate NAV (measured using the aggregate NAV attributable to stockholders as of March 31, 2025).

In addition, the amended share repurchase plan provides that in the event that we determine to repurchase some but not all of the shares submitted for repurchase during any month, shares submitted for repurchase during such month will be repurchased on a pro rata basis subject to the following repurchase priority. First, repurchase requests made upon the death or qualifying disability of a stockholder who is a natural person (subject to the same terms and conditions as waivers of the Early Repurchase Deduction) will be repurchased in full to the extent there are available funds up to a limit of \$5 million per month. Second, repurchase requests that would result in the account having a balance below \$2,500 will be repurchased in full to the extent there are available funds. Thereafter, any remaining funds will be used to repurchase all other shares submitted for repurchase during such month on a pro rata basis.

The disclosures in the Prospectus regarding our share repurchase plan, including the section "Share Repurchases" and other similar disclosures are replaced with the following:

General

While you should view your investment as long term with limited liquidity, we have adopted a share repurchase plan, whereby each month stockholders may request that we repurchase all or any portion of their shares. Due to the illiquid nature of investments in real estate, we may not have sufficient liquid resources to fund repurchase requests. In addition, we have established limitations on the amount of funds we may use for repurchases during any calendar month and quarter. See "—Repurchase Limitations" below.

You may request that we repurchase shares of our common stock through your financial advisor or directly with our transfer agent. The procedures relating to the repurchase of shares of our common stock are as follows:

Certain broker-dealers require that their clients process repurchases through their broker-dealer, which may impact the time
necessary to process such repurchase request, impose more restrictive deadlines than described under our share repurchase
plan, impact the timing of a stockholder receiving repurchase proceeds and require different paperwork or process than
described in our share repurchase plan. Please contact your broker-dealer first if you want to request the repurchase of your
shares.

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- Under our share repurchase plan, to the extent we choose to repurchase shares in any particular month we will only repurchase shares following the close of business as of the last calendar day of that month (a "Repurchase Date"). To have your shares repurchased, your repurchase request and required documentation must be received in good order by 4:00 p.m. (Eastern time) on the second to last business day of the applicable month. Settlements of share repurchases will generally be made within three business days of the Repurchase Date. Repurchase requests received and processed by our transfer agent will be effected at a repurchase price equal to the transaction price on the applicable Repurchase Date (which will generally be equal to our prior month's NAV per share), subject to any Early Repurchase Deduction (as defined and discussed below).
- A stockholder may withdraw his or her repurchase request by notifying the transfer agent, directly or through the stockholder's financial intermediary, on our toll-free, automated telephone line, 833-433-4344. The line is open on each business day between the hours of 9:00 a.m. and 6:00 p.m. (Eastern time). Repurchase requests must be cancelled before 4:00 p.m. (Eastern time) on the last business day of the applicable month.
- If a repurchase request is received after 4:00 p.m. (Eastern time) on the second to last business day of the applicable month, the repurchase request will be executed, if at all, on the next month's Repurchase Date at the transaction price applicable to that month (subject to any Early Repurchase Deduction), unless such request is withdrawn prior to the repurchase. Repurchase requests received and processed by our transfer agent on a business day, but after the close of business on that day or on a day that is not a business day, will be deemed received on the next business day. All questions as to the form and validity (including time of receipt) of repurchase requests and notices of withdrawal will be determined by us, in our sole discretion, and such determination shall be final and binding.
- Repurchase requests may be made by mail or by contacting your financial intermediary, both subject to certain conditions described in this prospectus. If making a repurchase request by contacting your financial intermediary, your financial intermediary may require you to provide certain documentation or information. If making a repurchase request by mail to the transfer agent, you must complete and sign a repurchase authorization form, which can be found in our share repurchase plan filed as an exhibit to this registration of which this prospectus forms a part and is available on our website, www.starwoodNAV.reit. Written requests should be sent to the transfer agent at the following address:

SS&C GIDS, Inc. PO Box 219426 Kansas City, MO 64121-9426

Overnight Address: SS&C GIDS, Inc. 801 Pennsylvania Ave Suite 219426 Kansas City, MO 64105-1307 Toll Free Number: 833-433-4344

Corporate investors and other non-individual entities must have an appropriate certification on file authorizing repurchases. A signature guarantee may be required.

- For processed repurchases, stockholders may request that repurchase proceeds are to be paid by mailed check provided that the amount is less than \$100,000 and the check is mailed to an address on file with the transfer agent for at least 30 days.
- Processed repurchases of more than \$100,000 will be paid only via wire transfer. For this reason, stockholders who own more than \$100,000 of our common stock must provide wiring instructions for their brokerage account or designated U.S. bank account. Stockholders who own less than \$100,000 of our common stock may also receive repurchase proceeds via wire transfer, provided the payment amount is at least \$2,500. For all repurchases paid via wire transfer, the funds will be wired to the account on file with the transfer agent or, upon instruction, to another financial institution provided that the stockholder has made the necessary funds transfer arrangements. The customer service representative can provide detailed instructions on establishing funding arrangements and designating a bank or brokerage account on file. Funds will be wired only to U.S. financial institutions (ACH network members).
- A medallion signature guarantee will be required in certain circumstances. The medallion signature process protects stockholders by verifying the authenticity of a signature and limiting unauthorized fraudulent transactions. A medallion signature guarantee may be obtained from a domestic bank or trust company, broker-dealer, clearing agency, savings association or other financial institution which participates in a medallion program recognized by the Securities Transfer

Association. The three recognized medallion programs are the Securities Transfer Agents Medallion Program, the Stock Exchanges Medallion Program and the New York Stock Exchange, Inc. Medallion Signature Program. Signature guarantees from financial institutions that are not participating in any of these medallion programs will not be accepted. A notary public cannot provide signature guarantees. We reserve the right to amend, waive or discontinue this policy at any time and establish other criteria for verifying the authenticity of any repurchase or transaction request. We may require a medallion signature guarantee if, among other reasons: (i) the amount of the repurchase request is over \$500,000; (ii) you wish to have repurchase proceeds transferred by wire to an account other than the designated bank or brokerage account on file for at least 30 days or sent to an address other than your address of record for the past 30 days; or (iii) our transfer agent cannot confirm your identity or suspects fraudulent activity.

• If a stockholder has made multiple purchases of shares of our common stock, any repurchase request will be processed on a first in/first out basis unless otherwise requested in the repurchase request.

Minimum Account Repurchases

In the event that any stockholder fails to maintain the minimum balance of \$500 of shares of our common stock, we may repurchase all of the shares held by that stockholder at the repurchase price in effect on the date we determine that the stockholder has failed to meet the minimum balance, less any Early Repurchase Deduction. Minimum account repurchases will apply even in the event that the failure to meet the minimum balance is caused solely by a decline in our NAV. Minimum account repurchases are subject to Early Repurchase Deduction.

Sources of Funds for Repurchases

We may fund repurchase requests from sources other than cash flow from operations, including, without limitation, the sale of assets, repayments from our real estate debt investments, borrowings, offering proceeds (including from sales of our common stock or Operating Partnership units), and advances or deferral of fees and expenses, and we have no limits on the amounts we may fund from such sources as long as we are able to pay our indebtedness as it becomes due in the usual course of business and our total assets are not less than our total liabilities.

In an effort to have adequate cash available to support our share repurchase plan and for other corporate needs, we may reserve borrowing capacity under a line of credit. We currently have such a line of credit, but there can be no guarantee that we will always have one in the future. We can borrow against our line of credit to repurchase shares presented for repurchase during periods when we do not have sufficient proceeds from operating cash flows or the sale of shares to fund all repurchase requests.

Repurchase Limitations

We may determine to repurchase fewer shares than have been requested in any particular month to be repurchased under our share repurchase plan, or none at all, in our discretion at any time. In addition, the aggregate NAV of total repurchases of shares (excluding any Early Repurchase Deduction applicable to the repurchased shares) is limited. From our inception until May 23, 2024, the total amount of shares that we could repurchase was limited to no more than 2% of our NAV per month and no more than 5% of our NAV per calendar quarter. On May 23, 2024, our board of directors amended our share repurchase plan such that we limited share repurchases to 0.33% of our NAV per month and 1.0% of our NAV per quarter.

On June 6, 2025, our board of directors amended our share repurchase plan such that, (1) beginning with repurchases during the month of June 2025, we limit share repurchases to 0.5% of NAV per month (measured using the aggregate NAV attributable to stockholders as of the end of the immediately preceding month) and (2) beginning on July 1, 2025, we limit share repurchases to 1.5% of NAV per quarter (measured using the aggregate NAV attributable to stockholders as of the end of the immediately preceding quarter). As a result, the limit for the quarter ending June 30, 2025 is approximately 1.16% of our aggregate NAV (measured using the aggregate NAV attributable to stockholders as of March 31, 2025).

Since October 2022, repurchase requests have consistently exceeded the applicable monthly and/or quarterly limits of our share repurchase plan and may continue to do so in the future.

In the event that we determine to repurchase some but not all of the shares submitted for repurchase during any month, shares submitted for repurchase during such month are repurchased on a pro rata basis, subject to the repurchase priority described below. All unsatisfied repurchase requests must be resubmitted after the start of the next month or quarter, or upon the recommencement of the share repurchase plan, as applicable.

If the transaction price for the applicable month is not made available by the tenth business day prior to the last business day of the month (or is changed after such date), then no repurchase requests will be accepted for such month and stockholders who wish to have their shares repurchased the following month must resubmit their repurchase requests.

Should repurchase requests, in our board of directors' judgment, place an undue burden on our liquidity, adversely affect our operations or risk having an adverse impact on the company as a whole, or should we otherwise determine that investing our liquid assets in real properties or other investments rather than repurchasing our shares is in the best interests of the company as a whole, our board of directors may determine to repurchase fewer shares in any particular month than have been requested to be repurchased (including relative to the monthly and quarterly limits described above), or none at all. Further, our board of directors has in the past made exceptions to the limitations of our share repurchase plan and may in the future, in certain circumstances, make exceptions to such repurchase limitations (or repurchase fewer shares than such limitations), or modify or suspend our share repurchase plan if, in its reasonable judgement, it deems such action to be in our best interest and the best interest of our stockholders. Material modifications, including any amendment to the monthly or quarterly limitations on repurchases, to and suspensions of the share repurchase plan will be promptly disclosed to stockholders in a prospectus supplement (or post-effective amendment if required by the Securities Act) or special or periodic report filed by us. Material modifications will also be disclosed on our website. In addition, we may determine to suspend the share repurchase plan due to regulatory changes, due to changes in law or if we become aware of undisclosed material information that we believe should be publicly disclosed before shares are repurchased. Once the share repurchase plan is suspended, our board of directors must affirmatively authorize the recommencement of the plan before stockholder requests will be considered again. Upon a suspension of our share repurchase plan, our board of directors will consider at least quarterly whether the continued suspension of our share repurchase plan remains in our best interest and the best interest of our stockholders. However, our board of directors is not required to authorize the recommencement of our share repurchase plan within any specified period of time. Our board of directors may also determine to terminate our share repurchase plan if required by applicable law or in connection with a transaction in which our stockholders receive liquidity for their shares of our common stock, such as a sale or merger of our company or listing of our shares on a national securities exchange.

Shares held by the Advisor acquired as payment of the Advisor's management fee (and shares received in lieu of cash distributions on such shares) will not be subject to the share repurchase plan, including with respect to any repurchase limitations or the Early Repurchase Deduction. Notwithstanding the foregoing, our independent directors oversee the repurchase activity of the Advisor, and the approval of our independent directors is required for any repurchase request of the Advisor for Class I shares received as payment for the management fee that, when combined with any stockholder repurchase requests submitted through our share purchase plan, would cause us to exceed the monthly and quarterly repurchase limitations of our share repurchase plan, and any such approval must find that the repurchase would not impair our capital or operations and be consistent with the fiduciary duties of our independent directors.

Stockholders who exchange shares of one class for shares of another class with an equivalent aggregate NAV will not be subject to and will not be treated as having shares repurchased for the calculation of, the monthly or quarterly limitations on repurchases and will not be subject to the Early Repurchase Deduction. Repurchases of our shares or Operating Partnership units from the Special Limited Partner distributed to the Special Limited Partner with respect to its performance participation interest are not subject to the Early Repurchase Deduction, but, in the case of shares, such repurchases are subject to the monthly and quarterly repurchase limitations and do not receive priority over other shares for which repurchase is requested during such period.

Repurchase Priority

In the event that we determine to repurchase some but not all of the shares submitted for repurchase during any month (including where repurchase requests exceed the monthly or quarterly limits), shares submitted for repurchase during such month will be repurchased subject to the following repurchase priority. First, repurchase requests made upon the death or qualifying disability of a stockholder who is a natural person will be repurchased in full to the extent there are available funds up to a limit of \$5 million per month, subject to the terms and conditions regarding the death or qualifying disability for waivers of the Early Repurchase Deduction set forth below. To the extent such repurchase requests exceed the \$5 million per month limit, such requests will be satisfied in the order of the date of death or qualifying disability, beginning with the earliest of such date, and any unfulfilled requests will be repurchased on a pro rata basis with all other repurchase requests for such month. Second, repurchase requests that would result in the account having a balance below \$2,500 will be repurchased in full to the extent there are available funds. Thereafter, any remaining funds will be used to repurchase all other shares submitted for repurchase during such month on a pro rata basis.

There is no minimum holding period for shares of our common stock and stockholders can request that we repurchase their shares at any time. However, subject to limited exceptions, shares that have not been outstanding for at least 12 months are repurchased at 95% of the transaction price (the "Early Repurchase Deduction"). The 12 month holding period is inclusive of the month the stockholder purchases the shares and the month when the shares are repurchased. Additionally, stockholders who have received shares of our common stock in exchange for their Operating Partnership units may include the period of time such stockholder held such Operating Partnership units for purposes of calculating the holding period for such shares of our common stock. This Early Repurchase Deduction will also generally apply to minimum account repurchases. The Early Repurchase Deduction will not apply to shares acquired through our distribution reinvestment plan.

The Early Repurchase Deduction will inure indirectly to the benefit of our remaining stockholders and is intended to offset the trading costs, market impact and other costs associated with short-term trading in our common stock. We may, from time to time and in our discretion, waive the Early Repurchase Deduction in the following circumstances (subject to the conditions described below):

- repurchases resulting from death or qualifying disability;
- in the event that a stockholder's shares are repurchased because the stockholder has failed to maintain the \$500 minimum account balance; or
- due to trade or operational error.

As set forth above, we may waive the Early Repurchase Deduction in respect of repurchase of shares resulting from the death of a stockholder who is a natural person, subject to the conditions and limitations described above, including shares held by such stockholder through a revocable grantor trust or an IRA or other retirement or profit-sharing plan, after receiving written notice from the estate of the stockholder, the recipient of the shares through bequest or inheritance, or, in the case of a revocable grantor trust, the trustee of such trust, who shall have the sole ability to request repurchase on behalf of the trust. We must receive the written repurchase request within 12 months after the death of the stockholder for the requesting party to rely on any of the special treatment described above that may be afforded in the event of the death of a stockholder. Such a written request must be accompanied by a certified copy of the official death certificate of the stockholder. If spouses are joint registered holders of shares, the request to have the shares repurchased may be made if either of the registered holders dies. If the stockholder is not a natural person, such as certain trusts or a partnership, corporation or other similar entity, the right to waiver of the Early Repurchase Deduction upon death does not apply.

Furthermore, as set forth above, we may waive the Early Repurchase Deduction in respect of repurchase of shares held by a stockholder who is a natural person who is deemed to have a qualifying disability (as such term is defined in Section 72(m)(7) of the Code), subject to the conditions and limitations described above, including shares held by such stockholder through a revocable grantor trust, or an IRA or other retirement or profit-sharing plan, after receiving written notice from such stockholder, provided that the condition causing the qualifying disability was not pre-existing on the date that the stockholder became a stockholder. We must receive the written repurchase request within 12 months of the initial determination of the stockholder's disability for the stockholder to rely on any of the waivers described above that may be granted in the event of the disability of a stockholder. If spouses are joint registered holders of shares, the request to have the shares repurchased may be made if either of the registered holders acquires a qualifying disability. If the stockholder is not a natural person, such as certain trusts or a partnership, corporation or other similar entity, the right to waiver of the Early Repurchase Deduction upon disability does not apply.

Our board of directors has designated the following persons as "Key Persons" under our share repurchase plan: Barry Sternlicht, Andrew Sossen, Jeffrey Dishner, Jonathan Pollack and any individual that replaces such persons. Our share repurchase plan provides that if two or more such Key Persons are no longer actively involved in the business and activities of our sponsor, or are otherwise unable or unwilling to exercise the authority and discharge those day-to-day management responsibilities with respect to our sponsor as are currently exercised and discharged by such Key Person(s) (such inactivity, inability or unwillingness, "Inactivity"), and our sponsor or Starwood Capital has not appointed one or more replacements who will fulfill substantially all of the duties of one of such Key Persons within 90 days from the date such Inactivity began (meaning, for the sake of clarity, that one Key Person's responsibilities may remain unfilled for longer than 90 days) (a "Key Person Triggering Event"), then the Early Repurchase Deduction is waived with respect to shares that have been purchased in the 12 months preceding the expiration of five business days after the public disclosure of the occurrence of such Key Person Triggering Event until the completion of three full calendar months from the time the Key Person Triggering Event is publicly disclosed. The waiver of the Early Repurchase Deduction set forth in this paragraph will not apply to shares acquired through our distribution reinvestment plan.

Items of Note

When you make a request to have shares repurchased, you should note the following:

- if you are requesting that some but not all of your shares be repurchased, keep your balance above \$500 to avoid minimum account repurchase, if applicable;
- you will not receive interest on amounts represented by uncashed repurchase checks;
- under applicable anti-money laundering regulations and other federal regulations, repurchase requests may be suspended, restricted or canceled and the proceeds may be withheld; and
- all shares of our common stock requested to be repurchased must be beneficially owned by the stockholder of record making the request or his or her estate, heir or beneficiary, or the party requesting the repurchase must be authorized to do so by the stockholder of record of the shares or his or her estate, heir or beneficiary, and such shares of common stock must be fully transferable and not subject to any liens or encumbrances. In certain cases, we may ask the requesting party to provide evidence satisfactory to us that the shares requested for repurchase are not subject to any liens or encumbrances. If we determine that a lien exists against the shares, we are not obligated to repurchase any shares subject to the lien.

IRS regulations require us to determine and disclose on Form 1099-B the adjusted cost basis for shares of our stock sold or repurchased. Although there are several available methods for determining the adjusted cost basis, unless you elect otherwise by checking the appropriate box on the repurchase authorization form or calling our customer service number at 833-433-4344, we will utilize the first-in-first-out method.

Frequent Trading and Other Policies

We may reject for any reason, or cancel as permitted or required by law, any purchase orders for shares of our common stock. For example, we may reject any purchase orders from market timers or investors that, in our opinion, may be disruptive to our operations. Frequent purchases and sales of our shares can harm stockholders in various ways, including reducing the returns to long-term stockholders by increasing our costs, disrupting portfolio management strategies and diluting the value of the shares of long-term stockholders.

In general, stockholders may request that we repurchase their shares of our common stock once every 30 days. However, we prohibit frequent trading. We define frequent trading as follows:

- any stockholder who requests that we repurchase its shares of our common stock within 30 calendar days of the purchase of such shares:
- transactions deemed harmful or excessive by us (including, but not limited to, patterns of purchases and repurchases), in our sole discretion; and
- transactions initiated by financial advisors, among multiple stockholder accounts, that in the aggregate are deemed harmful or excessive.

The following are excluded when determining whether transactions are excessive:

- purchases and requests for repurchase of our shares in the amount of \$2,500 or less;
- purchases or repurchases initiated by us; and
- transactions subject to the trading policy of an intermediary that we deem materially similar to our policy.

At the Dealer Manager's discretion, upon the first violation of the policy in a calendar year, purchase and repurchase privileges may be suspended for 90 days. Upon a second violation in a calendar year, purchase and repurchase privileges may be suspended for 180 days. On the next business day following the end of the 90 or 180 day suspension, any transaction restrictions placed on a stockholder may be removed.

Mail and Telephone Instructions

We and our transfer agent will not be responsible for the authenticity of mail or phone instructions or losses, if any, resulting from unauthorized stockholder transactions if they reasonably believe that such instructions were genuine. Our transfer agent has established reasonable procedures to confirm that instructions are genuine including requiring the stockholder to provide certain specific identifying information on file and sending written confirmation to stockholders of record no later than five days following execution of the instruction. Stockholders, or their designated custodian or fiduciary, should carefully review such correspondence to ensure that the instructions were properly acted upon. If any discrepancies are noted, the stockholder, or its agent, should contact his, her or its financial advisor as well as our transfer agent in a timely manner, but in no event more than 60 days from receipt of such correspondence. Failure to notify such entities in a timely manner will relieve us, our transfer agent and the financial advisor of any liability with respect to the discrepancy.