STARWOOD REAL ESTATE INCOME TRUST, INC. SUPPLEMENT NO. 12 DATED JANUARY 19, 2024 TO THE PROSPECTUS DATED APRIL 7, 2023

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 7, 2023 (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 purposes of this Supplement are as follows:

- to provide an update on the tax characterization of our 2023 distributions;
- to disclose the transaction price for each class of our common stock as of February 1, 2024;
- to disclose the calculation of our December 31, 2023 NAV per share for each class of our common stock;
- to provide an update on our share repurchase requests; and
- to provide an update on the status of our current public offering (the "Offering").

Tax Characterization of 2023 Distributions

100% of our distributions for the year ended December 31, 2023 will be characterized as a return of capital for federal income tax purposes.

February 1, 2024 Transaction Price

The transaction price for each share class of our common stock for subscriptions accepted as of February 1, 2024 (and repurchases as of January 31, 2024) is as follows:

| | Transact | saction Price | | |
|---------|----------|---------------|--|--|
| | (per s | share) | | |
| Class S | \$ | 23.08 | | |
| Class T | \$ | 23.09 | | |
| Class D | \$ | 22.67 | | |
| Class I | \$ | 22.90 | | |

The February 1, 2024 transaction price for each of our share classes is equal to such class's NAV per share as of December 31, 2023. A detailed presentation of the NAV per share is set forth below. The purchase price of our common stock for each share class equals the transaction price of such class, plus applicable upfront selling commissions and dealer manager fees.

December 31, 2023 NAV Per Share

NAV per share is calculated in accordance with the valuation guidelines that have been approved by our board of directors. Our NAV per share, which is updated as of the last calendar day of each month, is posted on our website at www.starwoodNAV.reit. Please refer to "Net Asset Value Calculation and Valuation Guidelines" in the Prospectus for information on how our NAV is determined. The Advisor is ultimately responsible for determining our NAV. We have included a breakdown of the components of total NAV and NAV per share as of December 31, 2023 along with the immediately preceding month.

Our total NAV presented in the following tables includes the NAV of our Class S, Class T, Class D, and Class I common shares, as well as partnership interests of the Operating Partnership held by parties other than the Company. The following table provides a breakdown of the major components of our NAV as of December 31, 2023 (\$ and shares/units in thousands):

| Components of NAV | December 31, 2023 |
|--|-----------------------|
| Investments in real estate | \$ 22,450,905 |
| Investments in real estate debt | 1,589,134 |
| Cash and cash equivalents | 294,984 |
| Restricted cash | 245,651 |
| Other assets | 681,979 |
| Debt obligations | (12,717,273) |
| Secured financings on investments in real estate debt | (763,314) |
| Subscriptions received in advance | (13,225) |
| Other liabilities | (1,326,239) |
| Performance participation accrual | |
| Management fee payable | (10,848) |
| Accrued stockholder servicing fees (1) | (3,620) |
| Non-controlling interests in consolidated joint ventures | (71,510) |
| Net asset value | \$ 10,356,624 |
| Number of outstanding shares/units | 450,886 |

Stockholder servicing fees only apply to Class S, Class T and Class D shares. For purposes of NAV we recognize the stockholder servicing fee as a reduction of NAV on a monthly basis. Under accounting principles generally accepted in the United States of America ("GAAP"), we accrue the full cost of the stockholder servicing fee as an offering cost at the time we sell Class S, Class T and Class D shares. As of December 31, 2023, we have accrued under GAAP \$301.0 million of stockholder servicing fees payable to the Dealer Manager related to the Class S, Class T and Class D shares sold.

The following table provides a breakdown of our total NAV and NAV per share, by share class, as of December 31, 2023 (\$ and shares/units in thousands, except per share/unit data):

| | | | | | | | | |)perating | |
|--|-------------------|----|-------------------|----|-------------------|----|-------------------|----|------------------------------------|------------------|
| NAV Per Share | Class S Shares | | Class T Shares | | Class D Shares | | Class I Shares | Pa | artnership Units ⁽¹⁾ | Total |
| Net asset value | \$ 4,501,674 | \$ | 121,979 | \$ | 623,748 | \$ | 4,649,361 | \$ | 459,862 | \$ 10,356,624 |
| Number of outstanding shares/units | 195,024 | | 5,282 | | 27,513 | | 202,990 | | 20,077 | 450,886 |
| NAV Per Share/Unit as of December 31, 2023 | \$ 23.08 | \$ | 23.09 | \$ | 22.67 | \$ | 22.90 | \$ | 22.90 | |

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Set forth below are the weighted averages of the key assumptions in the discounted cash flow methodology used in the December 31, 2023 valuations, based on property types. Once we own more than one self-storage and one extended stay investment, we will include the key assumptions for the property types.

| | Discount | Exit Capitalization |
|----------------------|----------|------------------------|
| Property Type | Rate | Rate |
| Multifamily | 6.8% | 5.5% |
| Single-Family Rental | 6.9% | 5.6% |
| Industrial | 7.1% | 5.5% |
| Office | 7.8% | 6.4% |
| Other | 8.3% | 6.9% |

For quarter-end months, these assumptions are determined by the independent valuation advisor or third party appraisers, as applicable, per the terms of our valuation guidelines. The Advisor reviews the assumptions from each of the appraisals. A change in these assumptions would impact the calculation of the value of our property investments. For example, assuming all other factors remain unchanged, the changes listed below would result in the following effects on our investment values:

Includes the Operating Partnership units held by the Special Limited Partner and other third parties.

| | | Multifamily | Single-Family | Industrial | Office | Other |
|--------------------------|----------------|-------------|-------------------|------------|------------|------------|
| | Hypothetical | Investment | Rental Investment | Investment | Investment | Investment |
| Input | Change | Values | Values | Values | Values | Values |
| Discount Rate | 0.25% decrease | +1.9% | +1.9% | +2.0% | +1.9% | +1.8% |
| (weighted average) | 0.25% increase | (1.9)% | (1.9)% | (1.9)% | (1.9)% | (1.8)% |
| Exit Capitalization Rate | 0.25% decrease | +2.9% | +2.8% | +3.1% | +2.5% | +2.2% |
| (weighted average) | 0.25% increase | (2.7)% | (2.6)% | (2.8)% | (2.3)% | (2.0)% |

The following table provides a breakdown of the major components of our NAV as of November 30, 2023 (\$ and shares/units in thousands):

| Components of NAV | November 30, 2023 | |
|--|-------------------|--------------|
| Investments in real estate | \$ | 22,996,769 |
| Investments in real estate debt | | 1,560,506 |
| Cash and cash equivalents | | 444,912 |
| Restricted cash | | 269,930 |
| Other assets | | 825,707 |
| Debt obligations | | (12,842,841) |
| Secured financings on investments in real estate debt | | (746,984) |
| Subscriptions received in advance | | (11,372) |
| Other liabilities | | (1,399,997) |
| Performance participation accrual | | <u>—</u> |
| Management fee payable | | (11,525) |
| Accrued stockholder servicing fees (1) | | (3,671) |
| Non-controlling interests in consolidated joint ventures | | (76,041) |
| Net asset value | \$ | 11,005,393 |
| Number of outstanding shares/units | | 459,193 |

Stockholder servicing fees only apply to Class S, Class T and Class D shares. For purposes of NAV we recognize the stockholder servicing fee as a reduction of NAV on a monthly basis. Under accounting principles generally accepted in the United States of America ("GAAP"), we accrue the full cost of the stockholder servicing fee as an offering cost at the time we sell Class S, Class T and Class D shares. As of November 30, 2023, we have accrued under GAAP \$311.8 million of stockholder servicing fees payable to the Dealer Manager related to the Class S, Class T and Class D shares sold.

The following table provides a breakdown of our total NAV and NAV per share, by share class, as of November 30, 2023 (\$ and shares/units in thousands, except per share/unit data):

| NAV Per Share | Class S Shares | Class T Shares | Class D Shares | Class I Shares | (| hird-party Operating artnership Units ⁽¹⁾ | Total |
|--|-------------------|-------------------|-------------------|-------------------|----|---|---------------|
| Net asset value | \$ 4,776,995 | \$ 129,199 | \$ 665,213 | \$ 4,954,122 | \$ | 479,864 | \$ 11,005,393 |
| Number of outstanding shares/units | 198,357 | 5,363 | 28,116 | 207,280 | | 20,077 | 459,193 |
| NAV Per Share/Unit as of November 30, 2023 | \$ 24.08 | \$ 24.09 | \$ 23.66 | \$ 23.90 | \$ | 23.90 | |

Includes the Operating Partnership units held by the Special Limited Partner and other third parties.

Share Repurchase Request Update

Pursuant to the terms of our share repurchase plan, the total amount of aggregate share repurchases is limited to no more than 2% of our aggregate NAV per month (measured using the aggregate NAV as of the end of the immediately preceding month) and no more than 5% of our aggregate NAV per calendar quarter (measured using the aggregate NAV as of the end of the immediately preceding quarter).

In October 2023, we received repurchase requests equal to 4.5% of our aggregate monthly NAV. As per the terms of our share repurchase plan, we honored all repurchase requests for October 2023 on a pro rata basis up to the 2% monthly limitation. As such, 44.9% of each stockholder's October repurchase request was satisfied.

In November 2023, we received repurchase requests equal to 3.8% of our aggregate monthly NAV. As per the terms of our share repurchase plan, we honored all repurchase requests for November 2023 on a pro rata basis up to the 2% monthly limitation. As such, 52.5% of each stockholder's November repurchase request was satisfied.

In December 2023, we received repurchase requests equal to 2.9% of our aggregate monthly NAV. As per the terms of our share repurchase plan, we honored all repurchase requests for December 2023 on a pro rata basis up to the 5% quarterly limitation resulting in 1.0% of September 30, 2023 NAV being honored. As such, 37.9% of each stockholder's December repurchase request was satisfied. Repurchase requests declined 28.3% month over month and are down 56% from their peak in January 2023. December repurchase requests were at their lowest level since September 2022.

In accordance with our repurchase plan, on December 31, 2023, we repurchased all of the shares from stockholders that held less than \$500 in shares of our common stock and, as such, we exceeded the 5% quarterly limitation by \$88,142, as authorized by our board of directors.

Status of our Current Public Offering

This Offering was declared effective by the SEC on August 10, 2022 and we are currently offering on a continuous basis up to \$18.0 billion in shares of common stock, consisting of up to \$16.0 billion in shares in our primary offering and up to \$2.0 billion in shares pursuant to our distribution reinvestment plan. As of the date hereof, we had issued and sold (i) 44,937,795 shares of our common stock (consisting of 15,759,955 Class S shares, 18,218 Class T shares, 2,136,900 Class D shares and 27,022,722 Class I shares) in the primary offering for total proceeds of approximately \$1.2 billion and (ii) 11,750,931 shares of our common stock (consisting of 5,395,558 Class S shares, 197,847 Class T shares, 644,795 Class D shares and 5,512,731 Class I shares) pursuant to our distribution reinvestment plan for a total value of approximately \$0.3 billion. As of December 31, 2023, our aggregate NAV was approximately \$10.4 billion. We intend to continue selling shares in the Offering on a monthly basis.