STARWOOD REAL ESTATE INCOME TRUST, INC. SUPPLEMENT NO. 15 DATED APRIL 2, 2025 TO THE PROSPECTUS DATED APRIL 10, 2024

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 10, 2024 (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 disclose an update regarding changes to our management; and
- to disclose certain updates to our Prospectus.

Management Update

On March 31, 2025, our board of directors appointed Jonathan Pollack to serve as a member of our board of directors, effective April 1, 2025.

The following disclosure is added to the section of the Prospectus titled "Management—Directors and Executive Officers" and all other similar disclosure in the Prospectus.

Jonathan Pollack has served as a member of our board of directors and on the Advisor's Investment Committee since April 2025. Mr. Pollack joined Starwood Capital from Blackstone Group ("Blackstone"), where he served as Global Head of the firm's Real Estate Credit business since 2016. Mr. Pollack's experience goes beyond the credit area as he served on Blackstone's Real Estate Executive Committee, Equity Investment Committee and Operating Committee. Prior to joining Blackstone in 2015, Mr. Pollack was the Global Head of Commercial Real Estate at Deutsche Bank, and established Deutsche Bank as the top CMBS issuer and a leading special situations investor following the global financial crisis in 2008. Mr. Pollack also spent eight years in Deutsche Bank's London headquarters, helping to build the European commercial real estate business as the Head of Capital Markets. Mr. Pollack joined Deutsche Bank in 1999 from Nomura Group. Mr. Pollack graduated from Northwestern University with a B.A. in Economics.

Mr. Pollack provides our board of directors with extensive experience and knowledge in the real estate and credit industry.

Prospectus Updates

The following disclosure replaces and supersedes the third paragraph of the section of the Prospectus titled "Prospectus Summary—Can I request that my shares be repurchased?," the fifth paragraph of the section of the Prospectus titled "Share Repurchases—Early Repurchase Deduction" and all other similar disclosure in the Prospectus.

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 will be 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.

The following disclosure replaces and supersedes the seventh and eighth paragraphs of the section of the Prospectus titled "Management—The Advisor and Starwood Capital" and all other similar disclosure in the Prospectus.

The Advisor's Investment Committee process emphasizes a consensus-based approach to decision making among the members. The members of the Advisor's Investment Committee, along with their respective positions at Starwood Capital, are as follows:

Name	Position at Starwood Capital
Barry Sternlicht	Chief Executive Officer and Chairman of Starwood Capital
Jeffrey Dishner	Vice Chairman
Jonathan Pollack	President
Andres Panza	Managing Director and Head of U.S. Asset Management
Laura Mestel Rubin	Managing Director and Head of Portfolio Management
Austin Nowlin	Managing Director and Head of Capital Markets for the Americas
Duncan MacPherson	Managing Director and Head of Debt for Europe*
Ethan Bing	Managing Director and Co-Head of U.S. Acquisitions
Sean Harris	Managing Director
Joseph Nieto	Managing Director

^{*} For European Deals Only

For information concerning the background of Messrs. Sternlicht, Pollack, Panza, Nowlin, Harris and Nieto see "—Directors and Executive Officers" above. Information concerning the background of the remainder of the individuals named in the chart above is set forth below. Mr. Ellis Rinaldi, Senior Managing Director and Co-General Counsel of Starwood Capital, serves as an observer on the Advisor's Investment Committee.

The following disclosure replaces and supersedes the biography of Mr. Dishner as set forth in the section of the Prospectus titled "Management—The Advisor and Starwood Capital" and all other similar disclosure in the Prospectus.

Jeffrey Dishner serves as a member of the Advisor's Investment Committee and as the Vice Chairman at Starwood Capital. In this capacity, he works in conjunction with the firm's Chief Executive Officer in the day to day management and operations of the business with a particular focus on strategy. In addition, he is responsible for overseeing all international debt and equity investing, capital markets, portfolio management, and investor relations. Mr. Dishner is as a member of Starwood Capital's Executive and Investment Committees and has been a member of the Investment Committee and board of trustees of Starwood Property Trust since 2009. Prior to joining Starwood Capital in 1994, Mr. Dishner worked in the Commercial Mortgage Finance Group of J.P. Morgan & Co., where he focused on whole-loan dispositions and securitizations for various thrift institutions from 1993 to 1994. Prior to J.P. Morgan & Co., Mr. Dishner was a member of the Acquisitions Group at JMB Realty Corporation from 1987 to 1991. Mr. Dishner received a B.S. degree in economics from the Wharton School at the University of Pennsylvania and an M.B.A. from the Amos Tuck School at Dartmouth College, where he also serves on the European Advisory Board.