Prospectus Supplement No. 11
(To Prospectus dated September 11, 2026)

Filed pursuant to Rule 424(b)(3)
Registration No. 333-298634

Wheeler Real Estate Investment Trust, Inc.

This is Prospectus Supplement No. 11 (this "Prospectus Supplement") to our Prospectus, dated September 11, 2026 (the "Prospectus"), relating to the offer and sale of up to 710,466 shares of Series B Preferred Stock, without par value (the "Series B Preferred Stock"), of Wheeler Real Estate Investment Trust, Inc. by the selling stockholders identified in the Prospectus. Terms used but not defined in this Prospectus Supplement have the meanings ascribed to them in the Prospectus.

We have attached to this Prospectus Supplement our Current Report on Form 8-K filed on November 6, 2026. The attached information updates and supplements, and should be read together with, the Prospectus, as supplemented from time to time.

Investing in our Series B Preferred Stock involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "*Risk Factors*" beginning on page 6 of the Prospectus, and under similar headings in any amendments or supplements to the Prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of the Prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement is November 6, 2026.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

Date of report (date of earliest event reported): **November 5, 2026**

WHEELER REAL ESTATE INVESTMENT TRUST, INC.
(Exact name of registrant as specified in its charter)

Maryland	**001-35713**	**45-2681082**
(State or other jurisdiction of incorporation or organization)	(Commission File Number)	(IRS Employer Identification No.)

2529 Virginia Beach Blvd. Virginia Beach, VA	**23452**
(Address of principal executive offices)	(Zip code)

Registrant's telephone number, including area code: **(757) 627-9088**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligations of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, $0.01 par value per share	WHLR	Nasdaq Capital Market
Series B Preferred Stock	WHLRP	Nasdaq Capital Market
Series D Cumulative Convertible Preferred Stock	WHLRD	Nasdaq Capital Market
7.00% Subordinated Convertible Notes due 2031	WHLRL	Nasdaq Capital Market

Item 3.03. Material Modification to Rights of Security Holders

Conversion Price of 7.00% Subordinated Convertible Notes due 2031

Item 8.01 of this Current Report on Form 8-K as to the redemptions by the holders of Wheeler Real Estate Investment Trust, Inc.'s (the "Company") Series D Cumulative Convertible Preferred Stock (the "Series D Preferred Stock") is incorporated herein by reference.

For the November redemptions, the lowest price at which any Series D Preferred Stock was converted by a holder thereof into the Company's common stock, par value $0.01 ("Common Stock") was approximately $1.07. Accordingly, pursuant to Section 14.02 (Optional Conversion) of the indenture governing the Company's 7.00% Subordinated Convertible Notes due 2031 (the "Notes"), the conversion price for the Notes was further adjusted to approximately $0.59 per share of Common Stock (approximately 42.50 shares of Common Stock for each $25.00 of principal amount of the Notes being converted), representing a 45% discount to $1.07.

Item 8.01 Other Events

Results of November 2026 Series D Preferred Stock Redemptions

- The 38th monthly "Holder Redemption Date" occurred on November 5, 2026.
- The Company processed three redemption requests from holders of its Series D Preferred Stock, collectively redeeming 1,903 shares of Series D Preferred Stock for a redemption price of approximately $41.80 per share ($25.00 per share plus the amount of all accrued but unpaid dividends to and including the November 5, 2026 Holder Redemption Date) (the "Redemption Price").
- The Company settled the aggregate Redemption Price through the issuance of 74,374 shares of its Common Stock.
- The volume weighted average of the closing sales price, as reported on the Nasdaq Capital Market, per share of Common Stock for the ten consecutive trading days immediately preceding, but not including, the November 5, 2026 Holder Redemption Date was approximately $1.07.

Cumulative Series D Preferred Stock Redemption Information

- To date, the Company has processed 453 redemption requests, collectively redeeming 1,834,581 shares of Series D Preferred Stock.
- The Company has issued approximately 91,000 shares of its Common Stock in settlement of all such redemption requests in the aggregate.
- As of November 5, 2026, the Company had 1,862,906 shares of Common Stock and 1,723,288 shares of Series D Preferred Stock outstanding.

December 2026 Redemptions

- The deadline for the next monthly round of Series D Preferred Stock redemptions is November 25, 2026.
- The next monthly Holder Redemption Date will occur on December 7, 2026.
- Required redemption forms and a list of frequently asked questions can each be found on the Company's website at https://ir.whlr.us/series-d/series-d-redemption.

Information contained on the Company's website is not incorporated by reference into this Current Report on Form 8-K and should not be considered to be part of this Current Report on Form 8-K.

Forward-Looking Statements.

This Current Report on Form 8-K includes forward-looking statements. These statements are made under the "safe harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements may be identified by words such as "will, "anticipates," "possible," "likely," "plans," and “expects”, or the negative of such terms, or other comparable terminology. Forward-looking statements are statements that are not historical facts. Such forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties, which could cause actual results to differ materially from the forward-looking statements contained herein due to many factors. These forward-looking statements and such risks, uncertainties and other factors speak only as of the date of this Current Report on Form 8-K, and the Company expressly disclaims any obligation or undertaking to update or revise any forward-looking statement contained herein, or to reflect any change in our expectations with regard thereto or any other change in events, conditions or circumstances on which any such statement is based, except to the extent otherwise required by applicable law.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

WHEELER REAL ESTATE INVESTMENT TRUST, INC.

By: /s/ M. Andrew Franklin
Name: M. Andrew Franklin
Title: Chief Executive Officer and President

Dated: November 6, 2026