Filed pursuant to Rule 424(b)(3) Registration No. 333-284585



Wheeler Real Estate Investment Trust, Inc.

This is Prospectus Supplement No. 5 (this "Prospectus Supplement") to our Prospectus, dated March 5, 2025 (the "Prospectus"), relating to the issuance from time to time by Wheeler Real Estate Investment Trust, Inc. of up to 5,005,014 shares of our common stock, par value \$0.01 ("Common Stock"). 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 April 8, 2025. The attached information updates and supplements, and should be read together with, the Prospectus, as supplemented from time to time.

Investing in our Common 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 April 8, 2025.

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): April 7, 2025

WHEELER REAL ESTATE INVESTMENT TRUST, INC.

(Exact name of registrant as specified in its charter)

Maryland

(State or other jurisdiction of incorporation or organization)

001-35713

(Commission File Number) 45-2681082

(IRS Employer Identification No.)

2529 Virginia Beach Blvd.	
Virginia Beach, VA	23452
	$(7; \dots; 4)$

(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 \Box

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. \Box

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 Convertible 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 8.01 Other Events

Adjustment to 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.

Prior to April 7, 2025, the conversion price for the Company's 7.00% Subordinated Convertible Notes due 2031 (the "Notes") was approximately \$4.56 per share of the Company's common stock, par value \$0.01 ("Common Stock") (approximately 5.48 shares of Common Stock for each \$25.00 of principal amount of the Notes being converted).

For the April redemptions, the lowest price at which any Series D Preferred Stock was converted by a holder thereof into Common Stock was approximately \$3.58. Accordingly, pursuant to Section 14.02 (Optional Conversion) of the indenture governing the Notes, the conversion price for the Notes was further adjusted to approximately \$1.97 per share of Common Stock (approximately 12.69 shares of Common Stock for each \$25.00 of principal amount of the Notes being converted), representing a 45% discount to \$3.58.

Results of April 2025 Series D Preferred Stock Redemptions

- The 19th monthly "Holder Redemption Date" occurred on April 7, 2025.
- The Company processed 13 redemption requests from holders of its Series D Preferred Stock, collectively redeeming 38,990 shares of Series D Preferred Stock for a
 redemption price of approximately \$40.75 per share (\$25.00 per share plus the amount of all accrued but unpaid dividends to and including the April 7, 2025 Holder
 Redemption Date) (the "Redemption Price").
- The Company settled the aggregate Redemption Price through the issuance of 443,715 shares of it 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 April 7, 2025 Holder Redemption Date was approximately \$3.58.

Cumulative Series D Preferred Stock Redemption Information

- To date, the Company has processed 334 redemption requests, collectively redeeming 1,616,833 shares of Series D Preferred Stock.
- The Company has issued approximately 811,800 shares of its Common Stock in settlement of all such redemption requests in the aggregate.
- As of April 8, 2025, the Company had 1,033,215 shares of Common Stock and 1,936,274 shares of Series D Preferred Stock outstanding.

May 2025 Redemptions

- The deadline for the next monthly round of Series D Preferred Stock redemptions is April 25, 2025.
- The next monthly Holder Redemption Date will occur on May 5, 2025.
- 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.

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: April 8, 2025