

As filed with the Securities and Exchange Commission on April 10, 2001

Registration No. 333-83933

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

POST-EFFECTIVE AMENDMENT NO. 5 TO
FORM S-11
REGISTRATION STATEMENT
Under
The Securities Act of 1933

WELLS REAL ESTATE INVESTMENT TRUST, INC.
(Exact name of registrant as specified in governing instruments)

6200 The Corners Parkway, Suite 250
Norcross, Georgia 30092
(770) 449-7800
(Address, Including Zip Code, and Telephone Number, Including Area Code,
of Registrant's Principal Executive Offices)

Douglas P. Williams, Executive Vice President
6200 The Corners Parkway
Norcross, Georgia 30092
770-449-7800
(Name, Address, Including Zip Code, and Telephone Number,
Including Area Code, of Agent for Service)

Copies to:
Donald Kennicott, Esq.
Michael K. Rafter, Esq.
Holland & Knight LLP
1201 West Peachtree Street, N.W., Suite 2000
Atlanta, Georgia 30309-3400
(404) 817-8500

Maryland
(State or other
Jurisdiction of Incorporation)

58-2328421
(I.R.S. Employer
Identification Number)

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. _____

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. _____

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. _____

If delivery of the prospectus is expected to be made pursuant to Rule 434, check the following box. _____

Approximate date of commencement of proposed sale to the public: As soon as

practicable following effectiveness of this Registration Statement.

Deregistration of Shares

Wells Real Estate Investment Trust, Inc. (the "Registrant") filed a Registration Statement on Form S-11 (Commission File No. 333-83933) (the "Registration Statement"), which the Securities and Exchange Commission declared effective on December 20, 1999, pursuant to which the Registrant registered 22,200,000 shares of its common stock, of which 20,000,000 shares were offered to the public on a "best efforts" basis, 2,200,000 shares were offered pursuant to the dividend reinvestment plan, and 800,000 shares were registered for issuance to participating broker-dealers upon their exercise of soliciting dealer warrants.

As of December 19, 2000, the Registrant had sold a total of 17,513,829 shares pursuant to the Registration Statement, including 16,840,813 shares sold to the public and 673,016 shares sold pursuant to the dividend reinvestment plan. The Registrant terminated the offering of the shares covered by this Registration Statement effective as of the close of business on December 19, 2000, and hereby deregisters the remaining 4,686,171 of its shares which were previously registered under the Registration Statement and remained unsold as of the close of business on December 19, 2000.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all the requirements for filing on Form S-11 and has duly caused this Post-Effective Amendment No. 5 to Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Norcross, and State of Georgia, on the 31/st/ day of March, 2001.

WELLS REAL ESTATE INVESTMENT TRUST, INC.

A Maryland corporation
(Registrant)

By: /s/ Leo F. Wells, III

Leo F. Wells, III, President

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment No. 5 to Registration Statement has been signed below on March 31, 2001 by the following persons in the capacities indicated.

Name	Title
-----	-----
/s/ Leo F. Wells, III ----- Leo F. Wells, III	President and Director (Principal Executive Officer)
/s/ Douglas P. Williams ----- Douglas P. Williams	Executive Vice President and Director (Principal Financial and Accounting Officer)
/s/ John L. Bell * ----- John L. Bell (By Douglas P. Williams, as Attorney-in-fact)	Director
/s/ Richard W. Carpenter * ----- Richard W. Carpenter (By Douglas P. Williams, as Attorney-in-fact)	Director
/s/ Bud Carter * ----- Bud Carter (By Douglas P. Williams, as Attorney-in-fact)	Director
/s/ William H. Keogler, Jr. * ----- William H. Keogler, Jr. (By Douglas P. Williams, as Attorney-in-fact)	Director

/s/ Donald S. Moss * Director

Donald S. Moss (By Douglas P. Williams, as Attorney-in-fact)

/s/ Walter W. Sessoms * Director

Walter W. Sessoms (By Douglas P. Williams, as Attorney-in-fact)

/s/ Neil H. Strickland * Director

Neil H. Strickland (By Douglas P. Williams, as Attorney-in-fact)

* By Douglas P. Williams, as Attorney-in-fact, pursuant to Power of Attorney dated June 28, 2000 and included as Exhibit 24.1 herein.

EXHIBIT INDEX

Exhibit No. -----	Description -----
24.1	Power of Attorney, filed herewith

