INVESTORS REAL ESTATE TRUST Form 424B5 April 01, 2013

Use these links to rapidly review the document Table of Contents
TABLE OF CONTENTS

Filed Pursuant to Rule 424(b)(5) Registration No. 333-165977

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and we are not soliciting an offer to buy these securities, in any jurisdiction where the offer or sale is not permitted.

Prospectus Supplement (To prospectus dated May 4, 2010)

Subject to Completion, dated April 1, 2013

8,000,000

Common Shares of Beneficial Interest

We are a self-advised equity real estate investment trust that owns and operates multi-family residential properties and commercial office, medical, industrial and retail properties located primarily in the upper Midwest states of Minnesota and North Dakota.

We are offering 8,000,000 of our common shares of beneficial interest, no par value per share, or common shares. We will receive all of the net proceeds from the sale of the common shares.

Our common shares are listed on the New York Stock Exchange, or the NYSE, under the symbol "IRET." The last reported sale price of our common shares on the NYSE on March 28, 2013 was \$9.87 per share.

We are organized and conduct our operations to qualify as a real estate investment trust, or REIT, for federal income tax purposes. To assist us in qualifying as a REIT, among other reasons, ownership of our outstanding common shares by any person is limited to 9.8%, subject to certain exceptions. In addition, our declaration of trust contains various other restrictions on the ownership and transfer of our common shares. See "Description of Common Shares Ownership and Transfer Restrictions" and "Restrictions on Ownership and Transfer" in the accompanying prospectus.

Investing in our common shares involves risks. See "Risk Factors" beginning on page S-4 of this prospectus supplement and beginning on page 11 of our Annual Report on Form 10-K for our fiscal year ended April 30, 2012.

	Per Share	Total	
			-
Public offering price	\$	\$	
Underwriting discount	\$	\$	

Proceeds to us (before expenses)	\$ \$	

We have granted the underwriters the right to purchase up to 1,200,000 additional common shares at the public offering price, less the underwriting discount, to cover over-allotments, if any, within 30 days of the date of this prospectus supplement.

The underwriters expect to deliver the common shares on or about April , 2013.

Neither the Securities and Exchange Commission, or the SEC, nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement and the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

BMO Capital Markets

Baird

RBC Capital Markets

The date of this prospectus supplement is April , 2013

Table of Contents

TABLE OF CONTENTS

PROSPECTUS SUPPLEMENT

	Page
About This Prospectus Supplement	
	<u>S-ii</u>
<u>Cautionary Note Regarding Forward-Looking Statements</u>	<u>S-iii</u>
<u>Prospectus Supplement Summary</u>	<u>S-1</u>
Risk Factors	<u>S-4</u> <u>S-6</u> <u>S-7</u>
<u>Use of Proceeds</u>	<u>S-6</u>
Additional Material Federal Income Tax Considerations	<u>S-7</u>
<u>Underwriting</u>	<u>S-8</u>
<u>Experts</u>	<u>S-12</u>
<u>Legal Matters</u>	<u>S-12</u>
Where You Can Find More Information	<u>S-13</u>
Incorporation of Certain Information By Reference	<u>S-13</u>
PROSPECTUS	
	Page
About this Prospectus	
	<u>1</u>
Forward-Looking Statements	<u>1</u>
<u>Investors Real Estate Trust</u>	1 1 2 2 2 2 2 3 4 10
Risk Factors	<u>2</u>
<u>Use of Proceeds</u>	2
General Description of the Offered Securities	2
<u>Description of Common Shares</u>	<u>3</u>
<u>Description of Preferred Shares</u>	<u>4</u>
Restrictions on Ownership and Transfer	
Ratio of Earnings to Combined Fixed Charges and Preferred Share Dividends	<u>11</u>
Material Federal Income Tax Considerations	<u>11</u>
<u>Plan of Distribution</u>	<u>38</u>
<u>Legal Matters</u>	<u>39</u>
<u>Experts</u>	<u>39</u>
Where You Can Find More Information	11 38 39 39 39
Documents Incorporated by Reference	39

You should rely only on the information contained in or incorporated by reference into this prospectus supplement, the accompanying prospectus or any applicable free writing prospectus. We have not, and the underwriters have not, authorized any other person to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it. This prospectus supplement and the accompanying prospectus do not constitute an offer to sell, or a solicitation of an offer to purchase, any securities in any jurisdiction where it is unlawful to make such offer or solicitation. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, any applicable free writing prospectus and the documents incorporated by reference herein or therein is accurate only as of their respective dates or on the date or dates which are specified in these documents. Our business, financial condition, liquidity, results of operations and prospects may have changed since those dates.

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein and therein. The second part is the accompanying prospectus, which gives more general information, some of which may not apply to this offering.

To the extent the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or the documents incorporated by reference, the information in this prospectus supplement will supersede such information.

This prospectus supplement does not contain all of the information that is important to you. You should read the accompanying prospectus as well as the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, especially the "Risk Factors" sections in this prospectus supplement and in our Annual Report on Form 10-K for our fiscal year ended April 30, 2012, filed with the SEC on July 16, 2012, before making an investment decision. See "Incorporation of Certain Information by Reference" in this prospectus supplement and "Where You Can Find More Information" in the accompanying prospectus.

Unless the context otherwise requires, in this prospectus supplement, the terms "we," "us," "our," "our company" or "the Trust" include Investors Real Estate Trust and its consolidated subsidiaries, including IRET Properties, A North Dakota Limited Partnership, which we refer to as "our operating partnership." The term "you" refers to a prospective investor.

S-ii

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements relate to future events or our future financial performance. We generally identify forward-looking statements by terminology such as "may," "will," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "potential" or "continue" or the negative of these terms or other similar words. These statements are only predictions. The outcome of the events described in these forward-looking statements is subject to known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. The "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of our Annual Report on Form 10-K for our fiscal year ended April 30, 2012, filed with the SEC on July 16, 2012, as well as other sections included or incorporated by reference into this prospectus supplement, discuss some of the factors that could contribute to these differences, including, but not limited to:

our ability to qualify and maintain our qualification as a REIT;
general volatility of the capital markets and the market price of our securities;
changes in our business or investment strategy;
availability, terms and deployment of capital;
actions and initiatives of the U.S. government, changes to U.S. government policies and the execution and impact of these actions, initiatives and policies;
changes in our industry and the markets in which we operate, interest rates or the general U.S. or international economy;
economic trends and economic recoveries; and
the degree and nature of our competition.

The forward-looking statements made in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events, except as required by law.

S-iii

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information from this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein. It does not contain all of the information that may be important to you.

General

We are a self-advised North Dakota real estate investment trust that owns and operates multi-family residential properties and commercial office, medical, industrial and retail properties located primarily in the upper Midwest states of Minnesota and North Dakota. We own the majority of our properties and conduct substantially all of our operations through IRET Properties, A North Dakota Limited Partnership, our operating partnership.

We operate mainly within the states of North Dakota and Minnesota, although we also have real estate investments in Colorado, Idaho, Iowa, Kansas, Missouri, Montana, Nebraska, South Dakota, Wisconsin and Wyoming. As of January 31, 2013, our portfolio consisted of 85 multi-family residential properties containing 9,924 apartment units and having a total real estate investment amount net, of accumulated depreciation, of \$491.1 million, and 184 commercial properties containing approximately 12.4 million square feet of leasable space consisting of:

68 commercial office properties containing approximately 5.1 million square feet of leasable space and having a total real estate investment amount, net of accumulated depreciation, of \$477.3 million;

66 commercial medical properties (including senior housing) containing approximately 3.0 million square feet of leasable space and having a total real estate investment amount net, of accumulated depreciation, of \$424.0 million;

20 commercial industrial properties containing approximately 2.9 million square feet of leasable space and having a total real estate investment amount, net of accumulated depreciation, of \$102.5 million; and

30 commercial retail properties containing approximately 1.4 million square feet of leasable space and having a total real estate investment amount net, of accumulated depreciation, of \$104.5 million.

We believe that we qualify, and we have elected to be taxed, as a REIT under the Internal Revenue Code of 1986, as amended, or the Code.

Our principal executive office is located at 1400 31st Avenue SW, Suite 60, Minot, North Dakota 58701, and our telephone number is (701) 837-4738. We maintain a website, www.iret.com, which contains additional information concerning us. Information on our website is neither part of nor incorporated by reference into this prospectus supplement or the accompanying prospectus.

Recent Developments

Common and Preferred Share Distributions.

On March 6, 2013, our Board of Trustees, or our Board, declared a regular quarterly distribution of \$0.13 per share and unit on our common shares and the limited partnership units of our operating partnership, payable April 1, 2013, to shareholders and unitholders of record on March 18, 2013. Also on March 6, 2013, our Board declared distributions of \$0.5156 per share and \$0.4968 per share on our Series A Preferred Shares of Beneficial Interest, or our Series B Preferred Shares, respectively, payable April 1, 2013 to holders of record on March 18, 2013.

Table of Contents

Pending and Recent Acquisitions.

Since January 31, 2013, we have signed purchase agreements to acquire the following properties:

a nine-building, 336-unit multi-family residential property in Omaha, Nebraska, on approximately 18.5 acres of land, for a purchase price of approximately \$28.3 million;

a 71-unit multi-family residential property in Rapid City, South Dakota, on approximately 3.5 acres, for a purchase price of approximately \$6.2 million, of which approximately \$2.8 million is to be paid in cash and approximately \$3.4 million is to be paid through the issuance in limited partnership units of our operating partnership;

an approximately 18.2-acre parcel of land in Bismarck, North Dakota, for a purchase price of \$3.3 million which purchase includes an existing approximately 16,844-square foot community center that is expected to be incorporated into the multi-family residential development project we currently have planned for this parcel; and

an approximately 0.7-acre parcel of vacant land in Minot, North Dakota, adjacent to our Chateau Apartments property, for a purchase price of approximately \$172,000, on which we currently expect to construct a multi-family residential property.

These pending acquisitions are subject to various closing conditions and contingencies, and no assurances can be given that any of these transactions will be completed on the terms currently proposed, or at all.

On March 25, 2013, we acquired an approximately 10-acre parcel of vacant land in Grand Forks, North Dakota, for a purchase price of \$1.6 million, on which we currently expect to construct a multi-family residential property.

Development Project and Construction Loan.

Since January 31, 2013, we have entered into a joint venture agreement to construct a multi-family residential project in Williston, North Dakota. Our joint venture partner in this proposed project is also our partner in our Williston Garden Apartments project. We will own approximately 70% of the project, subject to final project costs. The project is expected to consist of five buildings with approximately 288 apartment units in total, with an expected total development cost of \$62.4 million. Construction is expected to commence in March 2013, with completion expected in September 2014. The project site is approximately 14.5 acres of an approximately 40-acre parcel of land we purchased in April 2012. This proposed development project is subject to various contingencies, and no assurances can be given that the project will be completed in the time frame or on the terms currently proposed, or at all.

On March 21, 2013, one of our subsidiaries entered into an agreement for a construction loan to fund the proposed project. Bank of North Dakota, as a lender, and First International Bank & Trust, or First International, as a lender and as administrative agent and collateral agent, have agreed to provide a loan of up to approximately \$43.7 million for the project. The loan matures in October 2019 and is secured in part by a first mortgage on the project and by a performance guaranty of our operating partnership. The loan bears interest through September 2014 at an annual fixed rate of 5.0% and thereafter at an adjustable annual rate equal to the greater of (i) 3.15% plus the annual rate reported by the Federal Home Loan Bank (Des Moines) as the Five-Year Fixed Advance Rate and (ii) 5.0%.

Table of Contents

The Offering

Issuer

Investors Real Estate Trust

Securities Offered

Use of Proceeds

8,000,000 common shares (9,200,000 shares if the underwriters exercise their over-allotment option in full).

Common Shares to be Outstanding Upon Completion of this Offering

New York Stock Exchange Symbol **Restrictions on Ownership and Transfer**

common shares(1) "IRET"

Our Declaration of Trust limits to 9.8% the percentage ownership of our outstanding common shares by any one person or group of affiliated persons. Our Board may, in its sole discretion, exempt a person from the 9.8% ownership limit under certain circumstances.

We estimate that the net proceeds of this offering, after deducting the underwriting discount and other estimated offering expenses payable by us, will be approximately \$ million if the underwriters exercise in full their over-allotment (approximately \$ option). We will contribute the net proceeds of this offering to our operating partnership. Our operating partnership will use the net proceeds for general business purposes, which may include acquiring, developing, renovating, expanding or improving land and income-producing real estate properties in accordance with our investment strategy, including as described under the heading "Recent Developments Pending and Recent Acquisitions" above, and reducing our

debt. See "Use of Proceeds.'

Risk Factors See "Risk Factors" beginning on page S-4 of this prospectus supplement and beginning on page 11 of our Annual Report on Form 10-K for our fiscal year ended April 30, 2012, filed with

the SEC on July 16, 2012, to read about certain risks you should consider before buying our

common shares.

Certain Tax Considerations Certain federal income tax considerations of purchasing, owning and disposing of our common

shares are summarized in "Additional Material Federal Income Tax Considerations" on page S-7 of this prospectus supplement, which supplements the discussion under the heading

"Material Federal Income Tax Considerations" in the accompanying prospectus.

(1)

Based on 94,857,881 common shares outstanding as of March 11, 2013; excludes (i) 21,478,303 common shares issuable upon redemption of outstanding limited partnership units of our operating partnership and (ii) 1,200,000 common shares that we may issue upon exercise of the underwriters' over-allotment option.

Table of Contents

RISK FACTORS

An investment in our common shares involves a high degree of risk. In addition to other information in this prospectus supplement, you should carefully consider the following risks, the risks described in our Annual Report on Form 10-K for our fiscal year ended April 30, 2012, as well as other information and data set forth in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein before making an investment decision with respect to our common shares. The occurrence of any of these risks could materially and adversely affect our business, financial condition, liquidity, results of operations, prospects and our ability to make cash distributions to holders of our common shares, which could cause you to lose all or a significant portion of your investment in our common shares. Some statements in this prospectus supplement, including statements in the following risk factors, constitute forward-looking statements. See "Cautionary Note Regarding Forward-Looking Statements" in this prospectus supplement and "Forward-Looking Statements" in the accompanying prospectus.

We have no immediate designated use for all of the net proceeds of this offering.

We have not yet committed all of the net proceeds of this offering to investment in specific properties, and you will be unable to evaluate the economic merits of investments we make with the net proceeds before making an investment decision to purchase our common shares in this offering. As a result, we will have broad authority to invest the net proceeds of this offering in real estate investments that we may identify in the future, and we may use those proceeds to make investments with which you may not agree. In addition, our investment policies may be amended or revised from time to time at the discretion of our Board, without a vote of our shareholders. These factors increase the uncertainty, and thus the risk, of an investment in our common shares. Our failure to apply a substantial portion of the net proceeds of this offering effectively or to find suitable investments in a timely manner or on acceptable terms could result in returns that are substantially below expectations or result in losses

We have not established a minimum distribution payment level and we may be unable to generate sufficient cash flows from our operations to make distributions to our shareholders at any time in the future.

We are required to distribute to our shareholders at least 90% of our REIT taxable income each year. To the extent we satisfy the 90% distribution requirement but distribute less than 100% of our REIT taxable income, we will be subject to a U.S. federal corporate income tax and potentially to a U.S. federal excise tax on our undistributed taxable income. We have not established a minimum distribution payment level, and our ability to make distributions to our shareholders may be adversely affected by the risk factors described in this prospectus supplement and in our Annual Report for our fiscal year ended April 30, 2012.

We currently do not expect to use the net proceeds from this offering to make distributions to our shareholders. However, to the extent we do so, the amount of cash we have available to invest in properties or for other purposes would be reduced. Our Board has the sole discretion to determine the timing, form and amount of any distributions to our shareholders. Our Board will make determinations regarding distributions based upon, among other factors, our financial performance, debt service obligations, debt covenants and capital expenditure requirements. Among the factors that could impair our ability to make distributions to our shareholders are:

our inability to invest the net proceeds of this offering;
our inability to realize attractive risk-adjusted returns on our investments;
unanticipated expenses or reduced revenues that reduce our cash flow or non-cash earnings; and
decreases in the value of our properties.

S-4

Table of Contents

As a result, no assurance can be given that we will be able to continue to make distributions to our shareholders at any time in the future or that the level of any distributions we do make to our shareholders will increase or even be maintained over time, any of which could materially and adversely affect the market price of our common shares.

In addition, distributions that we make to our shareholders generally will be taxable to our shareholders as ordinary income to the extent of our current and accumulated earnings and profits, as determined for tax purposes. However, a portion of our distributions may be designated by us as long-term capital gains, to the extent that they are attributable to capital gain income recognized by us, or may constitute a return of capital, to the extent that they exceed our current and accumulated earnings and profits. A return of capital is not taxable, but has the effect of reducing the adjusted tax basis of a shareholder's investment in our common shares.

The market price of our common shares may be volatile due to numerous circumstances beyond our control.

The trading prices of equity securities issued by REITs historically have been affected by changes in market interest rates. One of the factors that may influence the price of our common shares is the annual yield from distributions on our common shares as compared to yields on other financial instruments. An increase in market interest rates, which may lead prospective purchasers of our common shares to demand a higher annual yield, or a decrease in our distributions to shareholders, could reduce the market price of our common shares.

Other factors that could affect the market price of our common shares include the following:

actual or anticipated variations in our quarterly results of operations;

changes in market valuations of companies in the real estate industry;

changes in expectations of future financial performance or changes in estimates of securities analysts;

fluctuations in stock market prices and volumes;

our issuances of common shares or other securities in the future;

the addition or departure of key personnel; and

announcements by us or our competitors of acquisitions, investments or strategic alliances.

Future offerings of debt or equity securities ranking senior to our common shares, our Series A Preferred Shares, our Series B Preferred Shares and our senior secured credit facility may prevent us from making distributions on our common shares, limit our operating and financial flexibility and may adversely affect the market price of our common shares.

If we decide to issue debt or additional equity securities in the future ranking senior to our common shares or otherwise incur indebtedness, it is possible that these securities or indebtedness will be governed by an indenture or other instrument containing covenants restricting our operating flexibility and limiting our ability to make distributions to our common shareholders. The articles supplementary establishing our Series A Preferred Shares and our Series B Preferred Shares, and our senior secured credit facility, contain provisions that, under certain circumstances, may prohibit us from making distributions on our common shares. Additionally, our Series A Preferred Shares and our Series B Preferred Shares have rights, preferences and privileges that are more favorable than those of our common shares, and in the future we may issue additional securities that have rights, preferences and privileges, including with respect to distributions, more favorable than those of our common shares and may result in dilution to owners of our common shares. Because our decision to issue debt or equity securities in any future offering or otherwise incur indebtedness will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings or financings, any of which could reduce the market price of our common shares and dilute the value of our common shares.

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds of this offering, after deducting the underwriting discount and other estimated offering expenses payable by us, will be approximately \$ million. If the underwriters exercise in full their over-allotment option, the net proceeds will be approximately \$ million.

We will contribute the net proceeds of this offering to our operating partnership. Our operating partnership intends to use the net proceeds from this offering for general business purposes, which may include acquiring, developing, renovating, expanding or improving land and income-producing real estate properties, including as described under the heading Prospectus Supplement Summary Recent Developments Pending Acquisitions" above, and reducing our debt.

S-6

Table of Contents

ADDITIONAL MATERIAL FEDERAL INCOME TAX CONSIDERATIONS

The following discussion supplements, and should be read together with, the discussion under the heading "Material Federal Income Tax Considerations" in the accompanying prospectus. The following is a summary of certain additional material federal income tax considerations with respect to the acquisition, ownership and disposition of our common shares.

You should consult your tax advisor regarding the specific tax consequences of the acquisition, ownership and disposition of our common shares.

Federal Income Taxation of Investors Real Estate Trust

We previously leased five assisted living facilities to a wholly-owned subsidiary of our operating partnership, LSREF Golden OPS 14 (WY), LLC ("LSREF Golden OPS"), as discussed in the accompanying prospectus under "Material Federal Income Tax Considerations Federal Income Taxation of Investors Real Estate Trust Requirements for Qualification" and "Material Federal Income Tax Considerations Federal Income Taxation of Investors Real Estate Trust Requirements for Qualification Income Tests." On January 13, 2012, we sold all of our interest in LSREF Golden OPS to a third party and, consequently, the five assisted living facilities referred to above are now leased by a third party.

Taxation of U.S. Shareholders

For payments received after December 31, 2013, a U.S. withholding tax at a 30% rate will be imposed on dividends paid on our shares received by U.S. shareholders who own their shares through foreign accounts or foreign intermediaries if certain disclosure requirements related to U.S. accounts or ownership are not satisfied. In addition, if those disclosure requirements are not satisfied, a U.S. withholding tax at a 30% rate will be imposed, for payments received after December 31, 2016, on proceeds from the sale of our shares received by U.S. shareholders who own their shares through foreign accounts or foreign intermediaries. We will not pay any additional amounts in respect of any amounts withheld.

Taxation of Non-U.S. Shareholders

For payments received after December 31, 2013, a U.S. withholding tax at a 30% rate will be imposed on dividends paid on our shares received by certain non-U.S. shareholders if certain disclosure requirements related to U.S. accounts or ownership are not satisfied. In addition, if those disclosure requirements are not satisfied, a U.S. withholding tax at a 30% rate will be imposed, for payments received after December 31, 2016, on proceeds from the sale of our shares received by certain non-U.S. shareholders. If payment of withholding taxes is required, non-U.S. shareholders that are otherwise eligible for an exemption from, or reduction of, U.S. withholding taxes with respect of such dividends and proceeds will be required to seek a refund from the Internal Revenue Service to obtain the benefit of such exemption or reduction. We will not pay any additional amounts in respect of any amounts withheld.

Recent Legislation

Pursuant to recently enacted legislation, as of January 1, 2013, (1) the maximum federal income tax rate on "qualified dividend income" received by U.S. shareholders taxed at individual rates is 20%, (2) the maximum federal income tax rate on long-term capital gain applicable to U.S. shareholders taxed at individual rates is 20%, and (3) the highest marginal individual federal income tax rate is 39.6%. Pursuant to such legislation, the backup withholding rate remains at 28%. Such legislation also makes permanent certain federal income tax provisions that were scheduled to expire on December 31, 2012. We urge you to consult your tax advisors regarding the impact of this legislation on the purchase, ownership and sale of our common shares.

Table of Contents

UNDERWRITING

BMO Capital Markets Corp. is acting as representative of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of common shares set forth opposite its name below.

Underwriter	Number of Shares
BMO Capital Markets Corp.	
Robert W. Baird & Co. Incorporated	
RBC Capital Markets, LLC	

Total

Under the terms of the underwriting agreement, the underwriters are committed, severally and not jointly, to purchase all of these common shares if any shares are purchased, other than those common shares covered by the over-allotment option described below. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify severally the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make because of any of those liabilities.

The underwriting agreement provides that the underwriters' obligations to purchase the common shares depend on the satisfaction of the conditions contained in the underwriting agreement. The conditions contained in the underwriting agreement include the requirement that the representations and warranties made by us and our operating partnership to the underwriters are true, that there is no material adverse change in the financial markets and that we deliver to the underwriters customary closing documents.

Commissions and Discounts

The representative has advised us that the underwriters propose initially to offer the common shares to the public at the public offering price appearing on the cover page of this prospectus supplement and to dealers at that price less a concession not in excess of \$ per share. The underwriters may allow, and the dealers may reallow, a discount not in excess of \$ per share to other dealers. After the initial offering, the public offering price and other selling terms may be changed.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. This information assumes either no exercise or full exercise by the underwriters of their option described below.

	Total		
	Per Share	Without Option	With Option
Public Offering Price	\$	\$	\$
Underwriting discount Proceeds to us (before expenses)	\$	\$	\$

We estimate that the total expenses related to this offering payable by us, excluding the underwriting discount, will be approximately \$160.000.

Table of Contents

Over-Allotment Option

We have granted the underwriters an option to purchase up to 1,200,000 additional common shares at the public offering price appearing on the cover page of this prospectus supplement, less the underwriting discount. To the extent this option is exercised, each underwriter will become obligated, subject to conditions, to purchase a number of additional common shares approximately proportionate to that underwriter's initial purchase commitment. The underwriters may exercise this option for 30 days from the date of this prospectus supplement. If any additional common shares are purchased, the underwriters will offer the additional common shares on the same terms as those on which the 8,000,000 common shares are being offered.

No Sales of Similar Securities

We, our executive officers and our trustees have agreed that, for a period of 60 days after the date of this prospectus supplement and subject to certain exceptions, we will not, directly or indirectly, without the prior written consent of BMO Capital Markets Corp., (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant for the sale of, or lend or otherwise transfer or dispose of any common shares or any securities convertible into or exercisable or exchangeable for or repayable with common shares, whether owned as of the date hereof or hereafter acquired or with respect to which we have acquired or hereafter acquire the power of disposition (collectively, the "Lock-Up Securities"), or exercise any right with respect to the registration of any of the Lock-up Securities, or file, or cause to be filed, any registration statement under the Securities Act with respect to any of the foregoing or (ii) enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of the Lock-Up Securities, whether any such swap, agreement or transaction is to be settled by delivery of common shares or other securities, in cash or otherwise.

New York Stock Exchange Listing

Our common shares are listed on the NYSE under the symbol "IRET."

Price Stabilization and Short Positions

Until the distribution of the common shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common shares. However, the representatives may engage in transactions that stabilize the price of the common shares, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common shares in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option described above. The underwriters may close out any covered short position by either exercising their option or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option. "Naked" short sales are sales in excess of the option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common shares in the open market after pricing that could adversely affect investors who purchase in

Table of Contents

the offering. Stabilizing transactions consist of various bids for or purchases of common shares made by the underwriters in the open market prior to the completion of the offering.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common shares or preventing or retarding a decline in the market price of our common shares. As a result, the price of our common shares may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the NYSE, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common shares. In addition, neither we nor any of the underwriters make any representation that they will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Offer, Sale and Distribution of Shares

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectus supplements by electronic means, such as e-mail. An electronic prospectus supplement may be available on the website maintained by one or more of the underwriters. Other than the prospectus in electronic format, the information on the website of any such underwriter is not part of this prospectus.

Other Relationships

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for the issuer and its affiliates, for which they received or may in the future receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the issuer or its affiliates. If the underwriters or their affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Table of Contents

Selling Restrictions

European Economic Area

In relation to each member state of the European Economic Area that has implemented the Prospectus Directive (each, a relevant member state), with effect from and including the date on which the Prospectus Directive is implemented in that relevant member state (the relevant implementation date), an offer of shares described in this prospectus supplement may not be made to the public in that relevant member state other than:

to any legal entity which is a qualified investor as defined in the Prospectus Directive;

to fewer than 100 or, if the relevant member state has implemented the relevant provision of the 2010 PD Amending Directive, 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive) in any relevant member state, as permitted under the Prospectus Directive, subject to obtaining the prior consent of the relevant Dealer or Dealers nominated by us for any such offer; or

in any other circumstances which do not require publication by the issuer of a prospectus pursuant to Article 3 of the Prospectus Directive;

provided that no such offer of shares shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For purposes of this provision, the expression an "offer of securities to the public" in any relevant member state means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe for the shares, as the expression may be varied in that member state by any measure implementing the Prospectus Directive in that member state, and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the relevant member state) and includes any relevant implementing measure in the relevant member state. The expression 2010 PD Amending Directive means Directive 2010/73/EU.

The sellers of the shares have not authorized and do not authorize the making of any offer of shares through any financial intermediary on their behalf, other than offers made by the underwriters with a view to the final placement of the shares as contemplated in this prospectus supplement. Accordingly, no purchaser of the shares, other than the underwriters, is authorized to make any further offer of the shares on behalf of the sellers or the underwriters.

Notice to Prospective Investors in the United Kingdom

This prospectus supplement and the accompanying prospectus are only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (ii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (each such person being referred to as a "relevant person"). This prospectus supplement and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. The securities are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such securities will be engaged in only with, relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Table of Contents

EXPERTS

The financial statements, and the related financial statement schedules, incorporated in this Prospectus by reference from the Company's Current Report on Form 8-K filed December 10, 2012 for the fiscal year ended April 30, 2012, and the effectiveness of Investors Real Estate Trust's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements and financial statement schedules have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

LEGAL MATTERS

Certain legal matters in connection with this offering will be passed upon for us by Hunton & Williams LLP and for the underwriters by Bass, Berry & Sims PLC. Leonard Street & Deinard, Professional Association will issue an opinion to us regarding certain matters of North Dakota law, including the validity of our common shares offered by this prospectus supplement. Hunton & Williams LLP and Bass, Berry & Sims PLC may rely as to certain matters of North Dakota law upon the opinion of Leonard Street & Deinard, Professional Association.

S-12

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC under the Exchange Act. You may read and copy any reports, statements or other information on file at the SEC's public reference room located at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. The SEC filings are also available to the public from commercial document retrieval services. These filings are also available at the website maintained by the SEC at http://www.sec.gov. You can also inspect copies of our public filings at the offices of the NYSE. For further information about obtaining copies of our public filings from the NYSE, please call (212) 656-5060.

We have filed with the SEC a "shelf" registration statement on Form S-3 under the Securities Act relating to the securities that may be offered by the accompanying prospectus. Such prospectus is a part of that registration statement, but does not contain all of the information in the registration statement. We have omitted parts of the registration statement in accordance with the rules and regulations of the SEC. For more detail about us and any securities that may be offered by such prospectus, you may examine the registration statement on Form S-3 and the exhibits filed with it at the locations listed in the previous paragraph.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

SEC rules allow us to incorporate by reference information into this prospectus supplement and the accompanying prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. Any information referred to in this way is considered part of this prospectus supplement and the accompanying prospectus from the date we file that document. Any reports filed by us with the SEC after the date of this prospectus supplement and the accompanying prospectus and before the date that the offering of common shares by means of this prospectus supplement and the accompanying prospectus is terminated will automatically update and, where applicable, supersede any information contained in this prospectus supplement and the accompanying prospectus or incorporated by reference into this prospectus supplement and the accompanying prospectus supplement and the accompanying prospectus the following documents or information filed with the SEC (other than, in each case, documents or information deemed in accordance with SEC rules to have been furnished and not filed):

our Annual Report on Form 10-K for our fiscal year ended April 30, 2012, filed with the SEC on July 16, 2012;

the information specifically incorporated by reference into our Annual Report on Form 10-K for our fiscal year ended April 30, 2012 from our Definitive Proxy Statement on Schedule 14A, filed with the SEC on July 25, 2012;

our Quarterly Reports on Form 10-Q for our fiscal quarters ended July 31, 2012, October 31, 2012 and January 31, 2013, filed with the SEC on September 10, 2012, December 10, 2012 and March 12, 2013, respectively; and

our Current Reports on Form 8-K and Form 8-K/A filed with the SEC on June 4, 2012, June 22, 2012, June 28, 2012, June 29, 2012, July 19, 2012, August 3, 2012, September 17, 2012, September 20, 2012, November 27, 2012, December 5, 2012, December 10, 2012, March 21, 2013 and April 1, 2013.

We also incorporate by reference into this prospectus supplement additional documents that we may file with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act from the date of this prospectus supplement until we have sold all of the securities to which this prospectus supplement relates or the offering is otherwise terminated; provided, however, that we are not incorporating any

Table of Contents

information furnished under either Item 2.02 or Item 7.01 of any Current Report on Form 8-K except to the extent specifically set forth above. These documents may include Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

You may obtain copies of any of these filings from us as described below, through the SEC or through the SEC's website as described above. Documents incorporated by reference are available without charge, excluding all exhibits unless an exhibit has been specifically incorporated by reference into this prospectus supplement, by requesting them in writing, by telephone or via the Internet at:

Investors Real Estate Trust 1400 31st Avenue SW, Suite 60 Minot, North Dakota 58701 Attn: Michael Bosh, General Counsel (701) 837-4738 Website: www.iret.com

THE INFORMATION CONTAINED ON OUR WEBSITE DOES NOT CONSTITUTE A PART OF THIS PROSPECTUS SUPPLEMENT OR THE ACCOMPANYING PROSPECTUS.

S-14

Table of Contents

Prospectus

\$150,000,000 Common Shares of Beneficial Interest Preferred Shares of Beneficial Interest

Investors Real Estate Trust may from time to time offer and sell: (i) our common shares of beneficial interest, no par value, and (ii) in one or more classes or series, our preferred shares of beneficial interest, no par value, all with an aggregate public offering price of up to \$150,000,000, on terms to be determined at the time of the offering. In this prospectus, we refer to our common shares of beneficial interest as our common shares, our preferred shares of beneficial interest as our preferred shares, and we refer to our common shares and our preferred shares collectively as our securities. Our securities may be offered, separately or together, in amounts, at prices and on terms to be set forth in one or more supplements to this prospectus (each, a prospectus supplement). The aggregate public offering price and terms of the securities will be determined by market conditions at the time the securities are offered.

The specific terms of any securities we sell and the terms on which we are offering such securities will be set forth in a prospectus supplement. The specific terms may include limitations on direct or beneficial ownership and restrictions on transfer of the securities, in each case as may be appropriate to preserve our status as a real estate investment trust, or REIT, for federal income tax purposes. The applicable prospectus supplement will also contain information, where applicable, about material federal income tax considerations relating to, and any listing on a securities exchange of, the securities offered by the prospectus supplement. The applicable prospectus supplement may also add to, update or change information contained in this prospectus. You should carefully read this prospectus and any applicable prospectus supplement, together with the additional information described under the heading "Where You Can Find More Information," before you invest in any of our securities.

Our common and preferred shares are traded on the NASDAQ Global Select Market under the symbols "IRET" and "IRETP", respectively. Our executive offices are located at 3015 16th Street SW, Suite 100, Minot, North Dakota 58701, telephone number: 701-837-4738. Our website address is www.iret.com. The information set forth on, or otherwise accessible through, our web site is not incorporated into, and does not form a part of, this prospectus or any other report or document we file with or furnish to the Securities and Exchange Commission, or the SEC.

We may sell the securities offered by this prospectus directly, through agents designated by us from time to time or to or through underwriters or dealers. If any agents, underwriters or dealers are involved in the sale of any of our securities, their names, and any applicable purchase price, fee, commission or discount arrangements between or among them, will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. None of our securities may be sold without delivery of a prospectus supplement.

Investing in our securities involves certain risks. See "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended April 30, 2009, which is incorporated by reference herein, as updated and supplemented by our periodic reports and other information that we file with the SEC.

Neither the SEC nor any state securities commission has approved or disapproved these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 4, 2010.

Table of Contents

No person has been authorized to give any information or to make any representations in connection with this offering other than those contained in this prospectus or incorporated by reference into this prospectus or an applicable prospectus supplement and, if given or made, such information or representations must not be relied upon as having been authorized by the Company or any underwriter, dealer or agent. This prospectus and any prospectus supplement do not constitute an offer to sell, or the solicitation of any offer to buy, any securities offered hereby in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. Neither the delivery of this prospectus or any prospectus supplement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the Company since the date hereof or thereof.

TABLE OF CONTENTS

 $\frac{1}{2}$

About this Prospectus	
Forward-Looking Statements	
Investors Real Estate Trust	