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**SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**Form F-4**  
**REGISTRATION STATEMENT**  
**UNDER**  
**THE SECURITIES ACT OF 1933**

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**AerCap Holdings N.V.**

(Exact name of Registrant as Specified in its Charter)

**The Netherlands**  
(Jurisdiction of  
Incorporation or Organization)

**7359**  
(Primary Standard Industrial  
Classification Code Number)

**98-0514694**  
(I.R.S. Employer  
Identification Number)

**AerCap**  
**AerCap House**  
**Stationsplein 965**  
**1117 CE Schiphol Airport Amsterdam**  
**The Netherlands**  
**Attention: Chief Legal Officer**  
**+31 20 655 96 71**

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

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**CT Corporation System, 111 Eighth Avenue, 13<sup>th</sup> Floor, New York, NY 10011, (212) 894-8641**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

**Robert S. Reder, Esq.**  
**Drew S. Fine, Esq.**  
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**1 Chase Manhattan Plaza**  
**New York, NY 10005**  
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**Raymond O. Gietz, Esq.**  
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**767 Fifth Avenue**  
**New York, NY 10153**  
**(212) 310-8000**

**Approximate date of commencement of proposed sale to the public:**  
As soon as practicable after this Registration Statement becomes effective.

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.  333-162365

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.

**This registration statement shall become effective upon filing with the Securities and Exchange Commission in accordance with Rule 462(b) under the Securities Act.**

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**CALCULATION OF REGISTRATION FEE**

<b>Title of Each Class of Securities to be Registered</b>	<b>Amount to be Registered<sup>(1)</sup></b>	<b>Proposed Maximum Offering Price Per Share</b>	<b>Proposed Maximum Offering price<sup>(2)</sup></b>	<b>Amount of Registration Fee</b>
Ordinary Shares, par value €0.01 per share	2,892	N/A	\$31,840.92	\$2.27

<sup>(1)</sup> Represents, together with the 34,346,596 shares previously registered under the F-4 filed on October 6, 2009 (Registration No. 333-162365), the maximum number of AerCap

Holdings N.V. ("AerCap") ordinary shares to be issued to shareholders of Genesis Lease Limited ("Genesis") in connection with a business combination between the two companies, assuming that no Genesis shareholder seeks appraisal of its shares under Bermuda law in connection with such transaction. To the extent that any AerCap ordinary shares are not issued to Genesis shareholders that seek appraisal of their shares, such AerCap ordinary shares will be issued to persons who may be deemed to be underwriters pursuant to Rule 154(c) of the Securities Act and are being registered hereunder to cover resales from time to time after issuance to such persons, subject to the maximum number of shares that such persons have agreed to acquire pursuant to arrangements between AerCap and such persons as more fully described in our currently effective registration statement.

- (2) Pursuant to Rule 457(c) and Rule 457(f) of the Securities Act, and solely for the purpose of calculating the registration fee, the proposed maximum offering price of \$31,840.92 is equal to the product of (a) a market value of \$11.01 per share of the American Depositary Shares of Genesis ("Genesis ADSs"), corresponding to the average of the high and low prices for the Genesis ADSs on the New York Stock Exchange on March 18, 2010, and (b) 2,892, the number of AerCap ordinary shares being registered. Each Genesis ADS represents one Genesis common share, par value \$0.001 per share.
  - (3) Computed in accordance with Rule 457(f) of the Securities Act by multiplying the proposed maximum offering price by 0.00007130.
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## **EXPLANATORY NOTE AND INCORPORATION OF DOCUMENTS BY REFERENCE**

We are filing this registration statement with the Securities and Exchange Commission pursuant to General Instruction H of Form F-4 and Rule 462(b) of the Securities Act of 1933, as amended, for the sole purpose of registering an additional 2,892 ordinary shares, par value €0.01 per share (the "AerCap Common Shares"), for issuance in connection with the amalgamation of Genesis Lease Limited with AerCap International Bermuda Limited, a wholly owned subsidiary of AerCap Holdings N.V. We have previously registered 34,346,596 AerCap Common Shares under the Securities Act by means of our currently effective registration statement on Form F-4, Registration No. 333-162365.

In accordance with Rule 462(b), this registration statement incorporates by reference the contents of our currently effective registration statement, which was declared effective on February 3, 2010, including all amendments, supplements and exhibits thereto and all information incorporated by reference therein, other than the exhibits included herein. Additional opinions and consents required to be filed with this registration statement are listed on the Index to Exhibits attached to and filed with this registration statement.

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**ITEM 21. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.**

**Exhibit Index**

<u>Exhibit Number</u>	<u>Description</u>
5.1	Legal opinion of NautaDutilh N.V. regarding the validity of the securities being registered
23.1	Consent of PricewaterhouseCoopers Accountants N.V., an independent registered public accounting firm
23.2	Consent of NautaDutilh N.V. (included in the opinion filed as Exhibit 5.1 to this registration statement)
23.3	Consent of KPMG, an independent registered public accounting firm

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## SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Amsterdam, The Netherlands on March 19, 2010.

AerCap Holdings N.V.

By: /s/ KLAUS HEINEMANN

Name: Klaus Heinemann

Title: Chief Executive Officer

Pursuant to the requirement of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
* _____ Pieter Korteweg	Chairman of the Board of Directors	March 19, 2010
/s/ KLAUS HEINEMANN _____ Klaus Heinemann	Chief Executive Officer (principal executive officer)	March 19, 2010
/s/ ROBERT G. WARDEN _____ Robert G. Warden	Non-Executive Director	March 19, 2010
* _____ David J. Teitelbaum	Non-Executive Director	March 19, 2010
* _____ Gerald P. Strong	Non-Executive Director	March 19, 2010
* _____ W. Brett Ingersoll	Non-Executive Director	March 19, 2010
* _____ Marius J. L. Jonkhart	Non-Executive Director	March 19, 2010
* _____ James N. Chapman	Non-Executive Director	March 19, 2010

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<u>Signature</u>	<u>Title</u>	<u>Date</u>
* _____ Ronald J. Bolger	Non-Executive Director	March 19, 2010
* _____ Keith A. Helming	Chief Financial Officer (principal financial officer) (principal accounting officer)	March 19, 2010
* _____ Donald Puglisi	Authorized Representative in the United States	March 19, 2010
*By: _____ /s/ ROBERT G. WARDEN Robert G. Warden, <i>attorney-in-fact</i>		

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## Exhibit Index

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[ITEM 21. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.](#)

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[SIGNATURES](#)

[Exhibit Index](#)

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Amsterdam, 18 March 2010

AerCap Holdings N.V.  
 AerCap House  
 Stationsplein 965  
 1117 CE SCHIPHOL  
 THE NETHERLANDS

Ladies and Gentlemen,

### Registration Statement on Form F-4 Issuance of Ordinary Shares

This opinion letter is rendered to you in order to be filed as an exhibit to this Registration Statement on Form F-4 (the “**Registration Statement**”) to be filed by you pursuant to Rule 462(b) of the Securities Act of 1933, as amended, with the U.S. Securities and Exchange Commission (the “**SEC**”).

We have acted as legal counsel to AerCap Holdings N.V., a public company with limited liability (*naamloze vennootschap*), organized under the laws of the Netherlands (“**AerCap**”) in connection with the Registration Statement, which relates to the issuance at par of 2,892 AerCap ordinary shares in registered form with a par value of EUR 0.01 (the “**Shares**”). The Shares are being registered in addition to up to 34,346,596 AerCap ordinary shares in registered form with a par value of EUR 0.01, which were previously registered on AerCap’s currently effective Registration Statement (Reg. No. 333-162365) on file with the SEC and incorporated by reference in this Registration Statement in connection with the Amalgamation Agreement, as defined in the proxy statement/prospectus included in such Registration Statement.

This opinion letter is addressed to you and is delivered only in connection with the Registration Statement. This opinion letter is strictly limited to the matters stated in it and may not be read as extending by implication to any matters not specifically referred to in it. Nothing in this opinion letter should be taken as

NautaDutilh N.V. has its seat at Rotterdam, The Netherlands and is registered in the Commercial Register in Rotterdam under number 24338323. All services and other work are carried out under a contract for professional services (“*overeenkomst van opdracht*”) with NautaDutilh N.V., subject to the general conditions of NautaDutilh N.V. These general conditions include, among other provisions, a limitation of liability clause and have been filed with the Rotterdam Court of First Instance. They can be consulted at [www.nautadutilh.com](http://www.nautadutilh.com) and will be provided free of charge upon request.

ABN AMRO Bank 46.69.93.293; Fortis Bank 64.21.43.218; Postbank 50296; Account Name: Stichting Beheer Derdengelden Advocatuur NautaDutilh.

expressing an opinion in respect of any representation or warranty or other information contained in any document.

Except as set out herein, its contents may not be quoted, otherwise included, summarized or referred to in any means of publication or disclosed to any other party, except with our prior written consent. We hereby consent to the disclosure and filing of this opinion as Exhibit 5.1 to the Registration Statement and further consent to the reference to our firm in the ‘Validity of Securities’ section of the proxy statement/prospectus included in the Registration Statement (Reg No. 333-162365) incorporated by reference in this Registration Statement. In giving this consent, we do not thereby admit that we are included in the category of persons whose consent is required under section 7 of the United States Securities Act or the rules and regulations of the SEC.

In rendering the opinions expressed in this opinion letter, we have exclusively reviewed and relied upon the following documents: (i) a photocopy of the deed of incorporation of AerCap, dated 10 July 2006; (ii) photocopies of the deeds of amendment of the articles of association of AerCap dated 10 November 2006, 25 June 2007, 4 July 2008 and 12 June 2009 (the document mentioned under (i) as amended by the documents mentioned under (ii) is referred to as the “**Articles of Association**”); (iii) the minutes of shareholders meetings of AerCap held on 9 May 2008; (iv) the resolutions passed by the Board of AerCap at its meetings held on 15 September 2009 and 18 March 2010 (the resolutions referred in (iii) and (iv) collectively: the “**Resolutions**”), (v) a draft of a private deed of issue prepared by us pursuant to which the Shares will be issued, (vi) the agreement dated September 2009 between AerCap and AerCap International Bermuda Limited relating to the Amalgamation, (vii) an online extract dated the date hereof from the Commercial Register relating to AerCap; and (viii) a certificate (the “**Certificate**”) dated as of today signed by the Chief Executive Officer and the Chief Financial Officer of AerCap relating to factual matters stating that (A) AerCap has not (i) been dissolved (*ontbonden*), (ii) ceased to exist pursuant to a merger (*fusie*) or a division (*splitsing*), (iii) had its assets placed under administration (*onder bewind gesteld*), (iv) been declared bankrupt (*failliet verklaard*) or granted a suspension of payments (*surseance van betaling verleend*), or (v) been made subject to any other insolvency proceedings under any applicable law or otherwise be limited in its rights to dispose of its assets, (B) the Resolutions are in full force and effect, correctly reflect the resolutions stated in them and the factual statements made in the Resolutions are complete and correct, (C) the Articles of Association are in full force and effect and (D) the Shares will be issued and paid up in accordance with the Resolutions.

This opinion letter sets out our opinion on certain matters of the laws with general applicability of the Netherlands as they stand at today’s date and as they are

presently interpreted under published authoritative case law of the Dutch courts and the opinions expressed in this opinion letter are limited in all respects to and are to be construed and interpreted in accordance with, Dutch law. We do not express any opinion on public international law or on the rules promulgated under or by any treaty or treaty organisation, except insofar as these rules are directly applicable in the Netherlands, nor do we express any opinion on Dutch or European competition law or tax laws. No undertaking is assumed on our part to revise, update or amend this opinion letter in connection with or to notify or inform you of, any developments and/or changes of Dutch law subsequent to today's date.

This opinion letter may only be relied upon on the condition that AerCap accepts that the legal relationship between AerCap and NautaDutilh N.V. is governed by Dutch law and our general conditions.

In this opinion letter, legal concepts are expressed in English terms. The Dutch legal concepts concerned may not be identical in meaning to the concepts described by the English terms as they exist under the law of other jurisdictions.

For the purposes of this opinion letter, we have assumed that all documents reviewed by us as originals are complete and authentic and the signatures on these documents are the genuine signatures of the persons purporting to have signed the same, all documents reviewed by us as drafts of documents or as fax, photo or electronic copies of originals are in conformity with the executed originals and these originals are complete and authentic and the signatures on them are the genuine signatures of the persons purporting to have signed the same, that the factual statements contained in the Certificate and the Resolutions are true and correct on the date of this opinion letter and that the amalgamation will take effect in accordance with the Amalgamation Agreement.

Based upon and subject to the foregoing and subject to the qualifications set forth in this opinion letter and matters not disclosed to us, we are of the opinion that:

1. AerCap has been duly incorporated and is validly existing as a public company with limited liability (*naamloze vennootschap*) under Dutch law.
2. The Shares, if and when issued in accordance with the Resolutions, will have been validly issued, fully paid and are non-assessable.

The opinion expressed in 2. above is subject to the following qualifications:

- A. The term "non-assessable" as used herein means that the holder of a Share will not by reason of being merely such a holder, be subject to assessment or calls by AerCap for further payment on such Share.
- B. The Shares will be issued from the so-called "other reserves" that will increase in AerCap's balance sheet as a result of the amalgamation described in the Registration Statement and the agreement referred to under (vi) above. If a share is so issued, a person to whom it is issued does not have a duty to pay up the share (in the case of AerCap 0.01 euro per Share, i.e. par value). Law, doctrine and case-law recognize that a share may be issued from the reserves, but provide no explicit guidance as to whether it may be so issued to a person who is not - before the issuance - a shareholder. We firmly believe that a court should hold that in a situation where AerCap's "other reserves" increase as described, such reserves may be used to so issue Shares.

Yours faithfully,

/s/ NAUTADUTILH N.V.

NautaDutilh N.V.  
Jaap Jan Trommel

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form F-4 to which this document is attached as Exhibit 23.1 of our report dated March 15, 2010, relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in AerCap Holdings N.V.'s Annual Report on Form 20-F for the year ended December 31, 2009. We also consent to the reference to us under the heading 'Experts' in such Registration Statement.

/s/ H.F.M. Gertsen RA

H.F.M. Gertsen RA

PricewaterhouseCoopers Accountants N.V.

Rotterdam, the Netherlands

March 19, 2010

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**Exhibit 23.3**

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors  
Genesis Lease Limited

We consent to the use of our reports dated March 6, 2009, with respect to the consolidated balance sheets of Genesis Lease Limited as of December 31, 2008 and 2007, and the related combined and consolidated statements of income, shareholders' equity and comprehensive income, and cash flows for each of the years in the three-year period ended December 31, 2008, and the effectiveness of internal control over financial reporting as of December 31, 2008, incorporated herein by reference and to the reference to our firm under the heading "Experts" in the prospectus.

/s/ KPMG

KPMG  
Dublin, Ireland.  
March 18, 2010

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[Exhibit 23.3](#)

[Consent of Independent Registered Public Accounting Firm](#)