THE DRAWING IS MINE! THE CHALLENGES OF COPYRIGHT PROTECTION IN THE ARCHITECTURAL WORLD

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I. INTRODUCTION

"That's *my* building!"—exactly, what Thomas Shine must have thought when Skidmore Owings Merrill (SOM), an architectural firm, released their plans to build the Freedom Tower on the site of the former World Trade Center buildings in December 2003. A few years earlier, Shine was enrolled in Yale's Masters of Architecture Program and presented his skyscraper design, the Olympic Tower, in front of a panel, which included David Childs, Consulting Design Partner at SOM. Childs later praised Shine's design in a Yale School of Architecture annual alumni magazine. However, Childs actions seemed suspicious to Shine when SOM revealed their plans for the Freedom Tower, as SOM's design was "substantially similar" to Shine's Olympic Tower design. Subsequently, Shine filed suit against Childs and SOM for copyright infringement in 382 F. Supp. 2d 602 (S.D.N.Y. 2005).

Catching architectural copycats is not easy, as copyright ownership of architectural drawings varies based on the agreement, the means and methods by which the drawings were created can vary, and the opinions of ordinary observers of the "substantial similarity" between two buildings to determine copyright infringement may vary. Copyright infringement can occur with drawings for both new buildings, like the case in *Shine v. Childs*, and drawings of existing buildings (for the purpose of building additions). The latter difficulty arises when a building is "regenerated" for the purposes of attaining current building floor plans for a building addition or renovation. These drawings are a recreation of existing copyrighted drawings, which may infringe on the original owner's copyrights.

Further, computer drafting programs, such as Building Information Modeling (BIM) programs, exacerbate the issue. Plans are easily regenerated in a new medium to reproduce a copyright document, utilizing design tools that aid in drafting, making the probability of similarity more likely than not. Additionally, such regeneration, in programs that include "models," may constitute a "derivative work." In any case, however, infringement should not be reality; rather, such recreation should be recognized as an exception to the Copyright Act.

This note analyzes the implications of regenerating building plans for the purposes of a building addition, particularly when using computer drafting programs such as BIM, and the issues with copyright law. Part II presents a brief background of computer drafting programs and copyright law. Part III details the implications between drafting copyrighted documents for purposes

of building additions, particularly in programs such as BIM, and copyright law. Finally, Part IV recommends an approach how regenerated drawings, in both two- and three-dimensional form, should be treated by the Copyright Act.

II. BACKGROUND

Today, many architectural drawings are generated not by hand but by aid of computer programs, such as computer-aided-drafting (CAD) programs or Building Information Modeling (BIM) programs. Traditionally, CAD programs have limited users to two-dimensional-based drawing capabilities and offered limited, if any, collaboration ability to simultaneously work on the same file. Often, errors resulted from this lack of simultaneous collaboration, requiring careful handing off of documents to design the next component of the building (i.e. structural or mechanical) with any additional changes being meticulously relayed between parties.[1] For example, when an architect moves a wall, the wall could affect the placement of mechanical, plumbing, and electrical systems that run through the wall.

In contrast, BIM programs facilitate a more "collaborative process"[2] between architects, engineers, and consultants.[3] BIM programs incorporate not only three-dimensional building elements, which can easily extract two-dimensional drawings such as floor plans and sections, but BIM programs also incorporate construction scheduling (four-dimensional capability) and cost-estimating and constructability information (five-dimensional capability) to create a "virtual building" with all building information in one place.[4] By condensing all building data into one place, information can be easily shared amongst parties in a clear, concise manner,[5] resulting in faster transfer of information between parties, increased collaboration between parties, increased accuracy, lower chance of errors, reduction of waste, and more informed decision making early on in the process.[6] Such collaboration between parties requires additional attention to contract drafting and how the agreement will flow between design firms, contractors, consultants, etc.[7]

BIM is part of the push in the building industry towards integrated project delivery (IPD).[8] IPD is the integration of people, systems, business structures,

1. Compare standard vector-based programs in which drawings have to be manually drawn by hand to BIM programs, such as Revit. *See* Autodesk, *The Five Fallacies of BIM*, http://static.ziftsolutions.com/files/8a7c9fef2693aa1e0126d2961da1084b (last visited Mar. 1, 2011) [hereinafter Autodesk I] (discussing Revit's automatic synchronization of a change to all affected views, drawings, and schedules).

2. Beth Andrus & William Bender, *What's the Buzz About BIM*, http://www.structuremag.org/article.aspx?articleID=490 (last visited Mar. 1, 2011).

3. Martin Riese & Dennis Sheldon, *Comprehensive International BIM with Full Owner Involvement*, ZETLIN & DECHAIRA, http://www.zdlaw.com/quarterlyreview/?p=39 (last visited Mar. 1, 2011).

4. Andrus & Bender, *supra* note 2; Werner Sabo & James Zahn, *Building Information Modeling and Legal Issues*, SABO & ZAHN, http://www.sabozahn.com/pdf/74.pdf (last visited Mar. 1, 2011) [hereinafter Sabo & Zahn I].

5. Autodesk, *Building Information Modeling*, http://usa.autodesk.com/company/building-information-modeling/experience-bim (last visited Mar. 1, 2011).

6. *Id*.; Sabo & Zahn I, *supra* note 4.

7. Andrus & Bender, *supra* note 2.

8. *See* American Institute of Architects, *Integrated Project Delivery (IPD) Family*,

and practices that involves tight collaboration between the owner, the architect, and the general contractor.[9] The goal of IPD is to involve all key participants to make pro-active decisions about the project. BIM programs are essential to achieve effective collaboration.[10]

A. Computer Drafting Programs & the Architecture Industry

Before the 1960s and well into the 1980s for most of the architecture industry, drawings were completed by hand.[11] Hand drafting required an enormous amount of time, especially with drawing repetitive elements.[12] Slowly, the architecture and engineering industry has seen the shift from hand drafting to reliance on two-dimensional and, now, three-dimensional computer programs.

1. Computer Aided Drafting (CAD)

During the 1960s, a new method of drafting was starting to develop.[13] In 1963, Ivan Sutherland developed the "sketchpad" system at MIT, which allowed users to interact with a computer by use of the sketchpad and a light pen.[14] The drafting system developed into a vector-based system, in which coordinates are pin-pointed to "plot" the path of lines to eventually create working architectural plans. In the late 1980s, CAD programs had the ability to work on personal computers, as IBM released its first personal computer (PC) in 1981 and Autodesk released the first version of AutoCAD, "AutoCAD Release 1."[15] Later, competitors released other versions of CAD programs, such as Microstation by Bentley in 1984.[16] Such personal application allowed architecture firms and engineers to begin to incorporate CAD into their practices. Today, CAD programs have also incorporated a third vector into the system, allowing three-dimensional capability.[17]

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http://www.aia.org/contractdocs/AIAS076706 (last visited Mar. 1, 2011) (discussing that one of the requirements of integrated project delivery includes using building information modeling program).

9. American Institute of Architects California Council, *A Working Definition, Integrated Project Delivery*, http://images.autodesk.com/adsk/files/ipd_definition_doc_final_with_supplemental_info.pdf (last visited March 1, 2011).

10. *Id*.

11. *See* Cadazz, *CAD Software History*, http://www.cadazz.com/cad-software-history-1980-1985.htm (last visited Mar. 1, 2011) (discussing the introduction of Microstation into the architecture and engineering practices); CAMBRIDGE ENCYCLOPEDIA, *Computer-Aided Design (CAD)*, http://encyclopedia.stateuniversity.com/pages/4892/computer-aided-design-CAD.html (last visited Nov. 12, 2009) (discussing introduction of computers in drafting).

12. Francis D.K. Ching, ARCHITECTURAL GRAPHICS 10 (Wiley 5th ed. 2009).

13. THE CADD/GIS TECHNOLOGY CENTER FOR FACILITIES, INFRASTRUCTURE, AND ENVIRONMENT, *Computer-Aided Design and Drafting (CADD) and Geographic Information System (GIS) – Concepts and Terminology*, (Nov. 30, 1999) http://www.mass.gov/mgis/cadgisconcepts.pdf (last visited Mar. 1, 2011).

14. CAMBRIDGE ENCYCLOPEDIA, *supra* note 11. *See generally* IVAN SUTHERLAND, SKETCHPAD: A MAN-MACHINE GRAPHICAL COMMUNICATION SYSTEM (Sept. 2003) (discussing Mr. Sutherland's dissertation on Sketchpad).

15. CAMBRIDGE ENCYCLOPEDIA, *supra* note 11; Cadazz, *supra* note 11.

16. Cadazz, *supra* note 11.

17. Graeme Philipson, *The Third Dimension: CAD*, THE SYDNEY MORNING HERALD, Sept. 13, 2007, http://www.smh.com.au/small-business/the-third-dimension-cad-20090619-cpgl.html (last visited Mar. 1,

2. Building Information Modeling (BIM)

BIM is a newer technology. Developed out of the need for increased collaboration amongst design and construction parties, BIM is rapidly replacing CAD programs in the industry shift to more efficient design and construction measures.[18] BIM integrates two-dimensional designing into three-dimensional designing.[19] One of today's BIM programs, Revit, owned by Autodesk, started to develop in 1997.[20] Today, Autodesk is expanding their line of BIM programs. Autodesk's Revit program also has variants designed to encompasses a variety of specific construction industry areas, including structural engineering through Autodesk Revit Structure[21] and mechanical, electrical, and plumbing (MEP) through Autodesk Revit MEP.[22] In addition to the ability of BIM to permit collaboration between various parties, including the architect, structural engineer, mechanical engineer, and the construction manager,[23] BIM offers several advantages over traditional drafting programs including three-dimensional, alternate design, green building design, and cost estimation capabilities.

a. Three Dimensional Capabilities

The main advantage of BIM is the ability to add and manipulate three-dimensional objects easily. For example, a modification of one object results in the entire model being automatically updated, meaning every floor plan, elevation, and section is automatically synced with the change.[24] For example, the addition of a window or a shifting of wall in plan is automatically reflected in sections, elevation, and the three-dimensional perspective.[25] No further editing of other plans, sections, or elevations is required, saving time and avoiding errors.[26] Compare this to traditional two-dimensional, vector-based drawing (containing individual lines): a change in plan would require that every effected section and elevation be modified manually. This object-oriented manipulation means that all subsequent views generated on the model will be up-to-date and accurate.[27]

2011).

18. Doug Watling, *For An Architect 'No Two Projects Are the Same'* (Nov. 14, 2009), http://nbbusinessjournal.canadaeast.com/front/article/857194.

19. *Id*.

20. Autodesk, *Autodesk to Acquire Revit Technology Corporation; Acquisition Adds Complementary Technology for Building Industry* (Feb. 21, 2002), http://investors.autodesk.com/phoenix.zhtml?c=117861&p=irol-newsArticle&ID=261618&highlight=.

21. Autodesk, *Autodesk Revit Structure*, http://images.autodesk.com/adsk/files/revit_structure_2011_overview_brochure_us.pdf (2010).

22. Autodesk, *Autodesk Revit MEP Suite*, *available at* http://images.autodesk.com/adsk/files/autodesk_revit_mep_overview_brochure_us.pdf (2010).

23. Sabo & Zahn I, *supra* note 4.

24. Autodesk I, *supra* note 1, at 3.

25. *See* Matt San, *BIM—What Is It, Why Do I Care, and How Do I Do It?*, BREAKING DOWN THE WALLS, http://modocrmadt.blogspot.com/2005/01/bim-what-is-it-why-do-i-care-and-how.html (last visited Mar. 1, 2011) (discussing how views are linked together).

26. *Id*.

27. *See* Autodesk, *Autodesk Revit Brings Building Information Modeling to the University of*

b. Alternate Design and BIM Models

BIM programs, such as Revit, contain an additional feature called "design options" that allow a user to create various alternative building designs.[28] These design options (collectively referred to as the "design option set" for alternative designs for the same design issue)[29] allow the creator to explore alternative solutions for an addition within the same file.[30]

c. Green Design & Cost Estimation

With increased industry concentration on sustainability and green building, BIM integrates "green design" consultants into the program.[31] BIM includes building energy calculations, such as real-time energy use and water use levels into BIM models.[32] Thereby, creating a 'holistic building' design approach to buildings, maximizing efficiency of the building energy use and minimizing environmental impact of new and renovated buildings.[33] Currently, one BIM program developer, Autodesk, offers energy-analysis software, Autodesk Green Building Studio, that can extract a BIM model for calculation.[34]

3. The Issues with BIM: Ownership of the Model and Drawings

The creator of an original BIM model, i.e. the architect, maintains both the ownership rights of the file itself and the copyrights.[35] With respect to the former right, when utilizing BIM on a construction project to maximize efficiency of the project, many parties collaborate using this three-dimensional building program, such as architects, engineers, and consultants.[36]

Northumbria, http://images.autodesk.com/emea_nw_w_main/files/4662926_Northumbria_Uni_%28Revit%29_-_Final.pdf (last visited Mar. 1, 2011) (claiming Revit, a BIM program, can generate plans, sections, and elevations from a 3D Model).

28. Paul Aubin, *Class Presentation to Autodesk University, Design Options and Phasing in Revit Architecture*, *available at* http://au.autodesk.com/?nd=class&session_id=705 (last visited Mar. 1, 2011).

29. Beau Turner et al., *Not Your Dad's CAD: Phasing and Design Options using Autodesk Revit*, http://images.dcheetahimages.com/au.autodesk.com/ama/images/media/AU09_SpeakerHandout_AB118-1.pdf (last visited Mar. 1, 2011).

30. *Id*.

31. *See* Scott Brisk, *Revit MEP*, http://revitmep.blogspot.com/2008/04/bim-to-take-leed-to-next-level.html (Apr. 4, 2008) (discussing partnership between U.S. Green Building Council (USGBC) and Autodesk with the idea of BIM software being able to calculate real-time energy and water use levels).

32. *Id*.

33. *See* Autodesk, *Ecotect Analysis 2010: Visualize Sustainable Design*, 2 (2009), http://images.autodesk.com/adsk/files/ecotectanalysis_detail_brochure.pdf (describing BIM's effects on building design practices); Scott Brisk, *BIM to Take LEED to the Next Level*, REVIT MEP (Apr. 4, 2008, 12:02 PM) http://revitmep.blogspot.com/2008/04/bim-to-take-leed-to-next-level.html (discussing BIM's approach and impact on building design).

34. *See* Autodesk, *Autodesk Green Building Studio*, http://usa.autodesk.com/adsk/servlet/pc/index?id=11179508&siteID=123112 (last visited Mar. 1, 2011) (describing features of the energy analysis software).

35. *See* Dwight A. Larson & Kate A. Golden, *Construction Law: Entering the Brave, New World: An Introduction to Contracting for Building Information Modeling*, 34 WM. MITCHELL L. REV. 75, 104 (2007) (stating that, in general, the party that creates the model owns it).

36. Riese & Sheldon, *supra* note 3.

Collaboration is fueled by the creation of a central file location, e.g. the architecture firm's server.[37] Subsequently, the architect can assign "users" to the file.[38] The users are limited to modify certain drawings and/or components.[39] For example, a mechanical engineer, i.e. a user, will be granted access to the central file but will be limited to manipulating only the mechanical, electrical, and plumbing objects and families[40] in the master file; while a structural engineer will only be allowed to add and manipulate structural elements and families such as beams and columns.[41] Such collaboration among different parties using such a computer program creates multiple "owners" of the drawings.[42] The identification of parties, such as structural and mechanical engineers that will work on the BIM model and collaborate with the architect, is difficult.[43] Many times parties such as specialized consultants (e.g. lighting consultants), are added later in the project at a point in time past the initial contracting stage; therefore, assigning ownership of the BIM model before the project commences adds additional difficulty.[44]

Two standard architectural contracting documents responded to the shifting advancements in BIM by incorporating BIM ownership clauses in their standard form agreements. The American Institute of Architects (AIA) released E202-2008, Building Information Modeling Protocol Exhibit, which assigns authorship of each model element by project phase.[45] The basis of E202-2008 is to "[create] an environment that encourages model authors to share their models with downstream users, designers, contractors, schedulers, cost estimators and fabricators."[46] Authorship is determined by each model element and by project phase.[47] Rival to AIA's standard form contract documents, ConsensusDOCS released ConsensusDOCS 301 BIM Addendum, which recognizes the integration of parties using BIM as a design and a means

37. Vivek Sah & Clark Cory, BUILDING INFORMATION MODELING: AN ACADEMIC PERSPECTIVE 7–8, (2008), available at http://www.ijme.us/cd_08/PDF/196%20IT%20301.pdf.

38. Autodesk, AUTODESK REVIT ARCHITECTURE (2010).

39. *Id*.

40. "Families" are groups of elements such as windows, doors, wall types, etc. Each "family" contains a variety of sizes, widths, etc. making the "family" manipulable.

41. Autodesk, AUTODESK REVIT ARCHITECTURE (2010).

42. Note that "users" is the technical term designated by BIM programs. The ability of the user to manipulate the BIM model means that the user expends time and creativity to be an "owner" of the drawing.

43. Sue E. Yoakum & Donovan Hatem, *Building Information Modeling (BIM) for Design Professionals*, http://www.agcmichigan.org/education/documents/ArchitectsPerspective.pdf (last visited Nov. 12, 2009).

44. *See* Andrus & Bender, *supra* note 2 ("In traditional design-bid-build delivery systems, the design team typically has a contractual relationship directly with the owner, but has no such direct relationship with the contractor, or subcontractors, vendors or equipment suppliers. These entities may now be BIM participants. Does it make sense for all participants to sign a single BIM agreement . . . ?").

45. AMERICAN INSTITUTE OF ARCHITECTS, *Document E202-2008, Building Information Protocol Exhibit*, *available at* http://www.pat.ca/files/pdfs/AIA_091708_E202-2008_eSample_Blank.pdf (last accessed Aug. 12, 2010); Architosh, *AIA Announces New BIM Document E202-2008*, http://architosh.com/2008/09/aia-announces-new-bim-document-e202-2008/ (last visited Nov. 15, 2009).

46. Anthony Frausto-Robledo, *Architosh News: Mac BIM: AIA announces new BIM document E202-2008*, http://www.architosh.com/news/2008-09/archive/0926_aia_e202_bim.html (last visited Nov. 12, 2009).

47. AMERICAN INSTITUTE OF ARCHITECTS, *AIA Contract Documents, E202–2008 Building Information Modeling (BIM) Protocol Exhibit*, *available at* http://www.cdi-grp.net/uploads/091708_E202-2008_eSample_Blank.pdf.

and methods tool.[48]

B. Copyright Law

The following section gives a history of the copyright law pertaining to architectural drawings, including an in-depth discussion of the Architectural Works Copyright Protection Act, and introduces the dilemma between computer drafting programs, such as BIM, and copyright protection.

1. Pre-Architectural Works Copyright Protection Act

In the Copyright Act of 1976 ("Copyright Act"), Congress first defined protection to architectural drawings as protecting "pictorial, graphic, and sculptural works" and subsequently, extended to cover architectural drawings and specifications.[49] However, the Copyright Act failed to include buildings themselves.[50] This exclusion was because of the notion that copyright did not extend to utilitarian uses; therefore, buildings were essentially excluded under the Copyright Act because buildings were of nonutilitarian use.[51] Only in the rare case would a building be protected.[52]

In 1988, the United States passed the Berne Convention Implementation Act to align with the Berne Convention.[53] The Berne Convention Implementation Act amended the Copyright Act of 1976.[54] The Act provided protection to "three-dimensional works relative to . . . architecture."[55] However, while the Berne Convention Implementation Act extended copyright protection to architectural plans, the Act did not extend to completed architectural works.[56]

2. The Architectural Works Copyright Protection Act

Realizing the lack of adequate protection for architectural works, Congress addressed this issue by passing Pub. L. No. 101-650, "The

48. Associated Builders and Contractors, *BIM Addendum Now Available Through ConsensusDOCS*, http://www.abc.org/Newsroom2/News_Letters/2008_Archives/Issue_26/BIM_Addendum_Now_Available_Through_ConsesusDOCS_.aspx (last visited Nov. 12, 2009); Construction Magazine, *BIM Contracting Made Easy, The ConsensusDOCS 301 BIM Addendum*, http://constructor.construction.com/mag/2008_9-10/dept/0809-87.asp (Sept/Oct. 2008) (last visited February 12, 2010); James Oberlin ed., *ConsensusDOCS v. AIA Construction Forms*, http://www.healthcarebuildingideas.com/ME2/dirmod.asp?sid=9C1D8AFF47604273815B68CD6BE372A7&nm=News&type=news&mod=News&mid=9A02E3B96F2A415ABC72CB5F516B4C10&tier=3&nid=7FC71859CD5E492785E5661A59426C20 (last visited Feb. 12, 2010).

49. 5 BRUNER & O'CONNOR CONSTRUCTION LAW § 17:86; Andrew Baum & Britton Payne, *Protecting Architectural Works: Breaking New Ground with Familiar Tools*, 27 CONSTR. LAWYER 23 (2007).

50. Baum & Payne, *supra* note 49.

51. *Id*.

52. *Id*.

53. U.S. Copyright Office, Copyright Law Appendix II, http://www.copyright.gov/title17/92appii.html (last visited Mar. 1, 2011).

54. *Id*.

55. Baum & Payne, *supra* note 49, at 24.

56. Raphael Winick, *Copyright Protection for Architecture After the Architectural Works Copyright Protection Act of 1990*, 41 DUKE L.J. 1598, 1611–12 (1992).

Architectural Works Copyright Protection Act" ("AWCPA"), 17 U.S.C. § 101.[57] The AWCPA provides copyright protection to architectural works, defined as "the design of a building as embodied in any tangible medium of *expression*, including a building, architectural plans, or drawings."[58] The AWPCA protects the *expression* of an idea, not the idea itself.[59] "The work includes the overall form as well as the arrangement and composition of spaces and elements in the design, but does not include individual standard features."[60] Common sources, themes, styles, or material are not considered original to the author and thus, not a protectable entity.[61]

The purpose of copyright protection is to protect privileges, encouraging artistic and scientific advancement in architectural design.[62] However, a delicate balance must be achieved, given the fact that such protection may hinder advancement in the way that limits copying works entirely.[63] On one hand, protection should be given to architects who innovatively recombine elements to create a new building form, and, on the other hand, protection should be not be so limiting as to deprive use of such forms entirely.[64] Such protection creates an economic incentive to create popular designs. Without such protection, drawings would be replicated, reducing incentive for an architect to create designs in the first place.[65]

3. Copyright Registration & Architectural Drawings

Copyright registration is the identification of the original creation, not merely the registration of an entire set of drawings and specifications.[66] Failure to indicate the original creation on the VA form (Visual Arts Works)[67] may invalidate the copyright.[68] After the plans are appropriately filed with the U.S. Copyright Office, the plans become copyrighted material.[69]

The issue becomes tangled when there is an addition to a building, as the original plan is incorporated into the drawings. In the best case scenario, an owner will have a reuse license on the original building plans, allowing the

57. Pub. L. No. 101-650, 104 Stat. 5089 (1990) (codified as amended at 17 U.S.C. §§ 101, 102, 106, 120, 301 (2000)).

58. 17 U.S.C. §§ 101, 102(a)(8) (2006) (emphasis added).

59. 17 U.S.C. § 102.

60. 17 U.S.C. § 101 (emphasis added).

61. CONSTRUCTION CHECKLISTS 310 (Fred D. Wilshusen et al. eds., American Bar Association 2008).

62. Winick, *supra* note 56, at 1601–03.

63. *Id*. at 1603.

64. Winick, *supra* note 56, at 1605–06.

65. *See* Eales v. Environmental Lifestyles, Inc., 958 F.2d 876, 878 (9th Cir. 1992) (describing a situation in which a builder does not have a right to use residential housing drawings for multiple subdivisions since contracts typically specify the particular subdivision the plans are for).

66. Werner Sabo & James Zahn, *Copyright Act—Effect on Construction Practice*, SABO & ZAHN, http://www.sabozahn.com/pdf/12.pdf (last visited Nov. 13, 2009) [hereinafter Sabo & Zahn II].

67. U.S. Copyright Office, *Forms*, http://www.copyright.gov/forms (last visited Nov. 13, 2009).

68. Sabo & Zahn II, *supra* note 66.

69. *See* Eales, 958 F.2d at 879–80 (rejecting arguments that architectural plans are not copyrightable because they portray a useful article and consist of unprotectable ideas); Wilshusen et al., *supra* note 61, at 309 (stating that copyrights must be registered before infringement occurred).

owner to reproduce the documents.[70] Such reuse license clauses are included in standard form agreements.[71] Standard form agreements, such as the American Institute of Architects (AIA) or ConsensusDOCS, address ownership of design professional's plans and specifications.[72] In the AIA B-101 2007 documents, Standard Form Agreement Between Owner and Architect, the license grants the owner the right to alter and add to the project.[73] In ConsensusDOCS 240, Subparagraph 10.1.3, owner may use design documents for "renovating, remodeling or expanding."[74]

4. Infringement

a. Why and How It Occurs

However, the best case scenario (i.e. having a reuse license) does not always occur. There are various reasons why an owner will deviate from standard form agreements for owner-favored agreements over design firms and contractors. In the case that a reuse license is not granted in the first place, compensation in the future for reuse of plans is extremely unlikely.[75] In order to include the original building, there are two ways to generate the drawings: (1) measure and document the building to re-create the building plan; or (2) obtain a scanned image from the hard-copy of the building plans and digitally underlay the drawing in a computer drafting program in order to trace over and reproduce the document.[76] By using computer drafting programs to regenerate a copyrighted drawing, this raises two new issues: (1) the point at which the regeneration becomes a completed what is a completed work; and (2) who owns the newly drafted drawing.[77]

Architects have learned to bend the rules to navigate around this dilemma of copyrighted drawings. For example, in certain instances, owners have obtained licensed drawings belonging to one architect, had them redrawn by a third-party, and submitted the newly drafted drawings to the new architect.[78] The new drawings lack any indication, such as the prior firm's stamp on the

70. *See* Wilshusen et al., *supra* note 61, at 98 (indicating that standard form agreements, such as the American Institute of Architects (AIA), address ownership of design professional's plans and specifications).

71. *See* American Institute of Architects Contract B101-2007 § 7, at 5–6 (elaborating on copyright ownership). American Institute of Architects generates standard form contracts for design and construction projects. *Contract Documents*, THE AMERICAN INSTITUTE OF ARCHITECTS, http://www.aia.org/contractdocs/index.htm (last visited Mar. 1, 2011).

72. Wilshusen et al., *supra* note 61, at 98; *Why ConsensusDOCS*, CONSENSUSDOCS, http://consensusdocs.org/why/ (last visited Mar. 1, 2011).

73. THE CONSTRUCTION CONTRACTS BOOK: HOW TO FIND COMMON GROUND IN NEGOTIATING THE 2007 INDUSTRY FORM CONTRACT DOCUMENTS 251 (Daniel S. Brennan et al. eds., 2nd ed. 2008).

74. *Id*. at 253.

75. *Id*. at 250.

76. *See How to Trace over a Digital Image*, CHIEF ARCHITECT http://www.chiefarchitect.com/support/displayfaq.php?faqNumber=620 (last visited Mar. 1, 20011) (describing how to use a three-dimensional drafting program addressing how to underlay, scale, and dimension the drawing appropriately).

77. FUNDAMENTALS OF CONSTRUCTION LAW 14 (Carina Y. Enhada et al. eds., 2001).

78. Werner Sabo & James Zahn, *Copyright Licenses*, SABO & ZAHN, http://www.sabozahn.com/pdf/94.pdf [hereinafter Sabo & Zahn III] (last visited Mar. 1, 2011).

drawing; thus, the new architect assumes that there is no copyright violation occurring.[79] However, this is still infringing on the original architect's rights (regardless whether the new architect was aware of the copyrighted drawings).

Still, such regeneration is a contested issue. Owners may feel since they paid for the plans in the first case they should own them.[80] Owners do not want to have to pay twice for design services that the architecture firm has already been compensated for.[81] On the other hand, architects are concerned that while they are being compensated for their work and their creation of such drawings, the plans should not be reused as to subject the architect to increased liability for any defects in design or infringe on the architect's copyrights.[82]

b. Method of Infringement & Its Test

Courts and statues address infringement issues on copyrighted architectural plans.[83] To prove infringement, plaintiff must show: "(1) that the defendant copied from the plaintiff's work; and (2) that, taken together, the elements copied amount to an improper appropriation."[84] To prove the former element, "the plaintiff must show directly or by inference that the defendant mechanically copied the plaintiff's work . . . or that the defendant had the plaintiff's work in mind when he composed the alleged infringing work."[85] To prove the latter element, i.e. improper appropriation, "the plaintiff must show that at least some of the elements the defendant copied constitute protected subject matter, and that audiences for the two works will find these elements in the defendant's work to be similar to elements in the plaintiff's work."[86] Mere similarity between the works does not imply infringement;[87] rather, such similarity must be substantial.[88]

"Substantial similarity" is defined as "sufficient similarity of a second work to the protected work to support a reasoned inference by an ordinary observer that more probably than not the second work was copied from the copyrighted work."[89] The dominant test for substantial similarity, as elaborated by the Second Circuit, is the "total concept and feel" test.[90] The

79. *Id*.
80. Enhada et al., *supra* note 77, at 13.
81. Brennan et al., *supra* note 73, at 250.
82. Enhada et al., *supra* note 77, at 13–14.
83. 17 U.S.C. § 501 (2006). *See* Arstein v. Porter, 154 F.2d 464 (discussing infringement).
84. Goldstein on Copyright § 9.1 (2005); Shine v. Childs, 382 F.Supp. 2d 602, 611 (S.D.N.Y. 2005).
85. Goldstein on Copyright § 9.1 (2005).
86. *Id*.
87. Goldstein on Copyright § 9.1 (2005).
88. *Id.* § 9.2.1 (2005). Note that Professor Alan Latman proposed a new standard in assessing similarity. Mr. Latman coined a new term, "probative similarity," to describe a lower threshold of similarity to prove copying, noting that "similarities probative of copying need not lie in copyrighted expression[—]an unprotected element appearing in both the copyrighted work and the defendant's work may by itself indicate that the defendant had copied." *Id.* § 9.2.1.2 n.18; Alan Latman, *"Probative Similiarity" as Proof of Copying: Toward Dispelling Some Myths in Copyright Infringement*, 90 COLUM. L. REV. 1187 (1990) (discussing the applicability of the "probative similarity" test). In any case, the "substantial similarity" test should be used because the higher bar set in assessing similarity.
89. Wilshusen et al., *supra* note 61, at 311–12.
90. Shine, 382 F. Supp. 2d at 613.

"concept and feel" test calls upon the perspective of the ordinary observer to determine whether similarity exists.[91] This standard is subjective—"a wholly amorphous referent."[92] However, while the dominant test, circuits split on the usage of this test.[93]

In the context of regenerating building plans for the purposes of an addition or renovation, regeneration is a duplication of prior architectural plans. The problem is that the regeneration is the exact same configuration of spaces, elements, and details.[94] Such that an ordinary observer will regard the aesthetic appeal of the original work and the copyright work as the same, meaning the works are "substantially similar" to come to the conclusion that the regenerated plans constitutes infringement.[95]

c. Exception: Fair Use

There are certain exceptions that permit third-parties to use copyright works.[96] Under the fair use doctrine, a third-party may use the copyrighted work without the permission of author.[97] Fair use typically allows one to reproduce for reasons of criticism, comment, news reporting, teaching, scholarship, or research.[98] Factors considered to whether or not an architectural work constitutes a fair use include: (1) the purpose and the character of the use, i.e. commercial or non-profit; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion technically copyrighted; and (4) the effect on the market value of the copyrighted work.[99]

d. Copyright Protection & Derivative Works

Not only are the original drawings subject to protection under the AWCPA, but subsequent derivative works from the original are protectable as well.[100] 17 U.S.C. § 101 defines a "derivative work" as a "work based upon one or more preexisting works."[101] Included in derivative work protection are models and technical drawings, such as architectural plans.[102] According to 17 U.S.C. § 106, "the owner of copyright under this title has the exclusive rights to do and to authorize . . . to prepare derivative works based upon the

91. *Id*. at 614.

92. Tufenkian Import/Export Ventures, Inc. v. Einstein Moomjy, Inc., 338 F.3d 127, 134 (2d Cir. 2003).

93. *See generally* 3 PATRY ON COPYRIGHT § 9 (noting a two-part test set forth by Arnstein v. Porter, 154 F.2d 464 (2nd Cir. 1946) used by 1st, 2nd, 4th, 5th, 8th, and 9th circuits and a myriad of tests used by the 3rd, 6th, and 10th Circuits).

94. *See* Wilshusen et al., *supra* note 61, at 310 (discussing inappropriate duplication of architectural works).

95. *Id*.

96. *See* 17 U.S.C. §§ 107–12 (listing exceptions to exclusive rights).

97. Wilshusen et al., *supra* note 61, at 96.

98. 17 U.S.C. § 107 (2006).

99. 17 U.S.C. § 107.

100. Burton C. Allyn, IV, *The Architectural Works Copyright Protection Act of 1990*, http://www.aepronet.org/pn/vol5-no2.html (last visited March 1, 2011).

101. 17 U.S.C. § 101.

102. *Id*.

copyrighted work."[103] Derivative works prepared without the permission of the copyright owner of the original work: (1) infringe on the copyrights of the original work; and (2) are not protected.

In absence of a reuse license to reuse a drawing, the reproduction of the original building plan, along with the addition, constitutes a derivative work. However, a building addition in a drawing inherently builds up the original work, therefore, arguably, constituting infringement as a derivative work, a work in which the "secondary" author should not have rights to and constitutes infringement upon the original plans.

III. ANALYSIS

In absence of a reuse license or the retention of the original architect,[104] the Copyright Act does not distinguish "copying" from the various methods of reproducing such copyrighted documents. There are three methods of copying: (1) by direct reapplication of similar ideas (as illustrated in *Shine v. SOM*); (2) by tracing, i.e. underlaying a digital copy of the original building plan in a computer drafting program and tracing the scanned image;[105] or (3) recreating by physical building measurement and sketching. The first method is used to illustrate the basic concepts of copyrighted material while the latter two methods are practical approaches to recreating documents for building additions or renovations in absence of a reuse license (or the computer files from the previous architect).

A. Recreation: Reapplication of Similar Ideas

A landmark case in architectural copyright law is *Shine v. Childs*, 382 F. Supp. 2d 602.[106] Plaintiff, Thomas Shine, formerly a student in the Masters of Architecture Program at Yale University, sued defendants, a designer and architectural firm, Skidmore Owings Merrill (SOM), based out of Chicago, Illinois, for copyright infringement after plaintiff's skyscraper design "reappeared" in SOM's proposal for the World Trade Center site.[107] In 1999, the plaintiff presented the "Olympic Tower" and design models, including a prior version of the "Olympic Tower" for what the court referred to as "Shine '99",[108] in front of a panel of experts, including defendant, Mr. Childs, a consulting designer at Skidmore Owings Merrill.[109] Plaintiff's design featured

103. 17 U.S.C. § 106.

104. *See* ACREL, *Crafting a License to Use Architectural Plans*, *available at* http://www.acrel.org/Documents/Newsletters/May2005.pdf at 16 (last visited Mar. 1, 2011) (discussing costs and benefits with respect to re-using original architect for subsequent projects . . . "[w]henever the developer wants the right to use plans for additions and alterations of the original project or for a subsequent project, the architect should consider both the value of the re-use license as an economic matter and the legal risks that re-use may present.").

105. *See* Chief Architect, *supra* note 76 (explaining how to trace over architectural plans using computer software).

106. *Shine*, 382 F. Supp. 2d 602 (S.D.N.Y. 2005).

107. *Id*. at 604–05.

108. *Id*. at 605.

109. *Id*.

"a twisting tower with a symmetrical diagonal column grid, expressed on the exterior of the building, that follows the twisting surface created by the floor plates' geometry."[110] Subsequently, in 2003, SOM along with Mr. Childs, the consulting designer, unveiled the design for the "Freedom Tower" to be located at the World Trade Center location.[111] After SOM revealed the design of the Freedom Tower, Mr. Shine filed both Shine '99 and the Olympic Tower with U.S. Copyright Office.[112] Subsequently, Mr. Shine filed suit against defendants for willful and conscious disregard of Shine's copyrighted works.[113]

The District Court for the Southern District of New York examined the Freedom Tower in three ways: (1) copying of the original elements; (2) showing of originality; and (3) substantial similarity between the plaintiff's and defendants' work.[114] The District Court addressed the fact that Mr. Shine's Shine '99 model was merely conceptual; however, the conceptual design of the tower was "an expression and realization of . . . ideas."[115] The expression and realization of the conceptual idea was represented by the arrangement and composition the various elements of tapering and rough triangular shape.[116]

In analyzing the originality of SOM's model,[117] the District Court compared SOM's model to Mr. Shine's model. "In the copyright context, originality means the work was independently created by its author, and not copied from someone else's work. The level of originality and creativity that must be shown is minimal, only an 'unmistakable dash of originality need be demonstrated, high standards of uniqueness in creativity are dispensed with.'"[118] In analyzing the uniqueness of the elemental ideas such as a twisting tower, rectangular base, and parallel sides of the Freedom Tower and the Olympic Tower, the District Court concluded (under the ordinary observer test) reasonable jurors could "disagree on whether substantial similarity exists."[119] Further, there was no evidence that the defendants actually copied Mr. Shine's model by reviewing the model during Shine's presentation.[120] The

110. *Id*.

111. *Id*. at 606.

112. *Id*. at 607. Copyright protection is afforded to architectural works, 17 U.S.C. § 102 (2006). An "architectural work is defined as "the design of a building as embodied in any tangible medium of expression, including a building, architectural plans, or drawings. The work includes the overall form as well as the arrangement and composition of spaces and elements in the design, but does not include individual standard features." 17 U.S.C. § 101 (2006).

113. Shine, 382 F.Supp. 2d at 607. Note that the AWCPA extends protection to designs of buildings in architectural plans, meaning that the building be not necessarily built. *See* 17 U.S.C. § 101 (2006) (defining an "architectural work" as "the design of a building as embodied in any tangible medium of expression, including a building, architectural plans, or drawings. The work includes the overall form as well as the arrangement and composition of spaces and elements in the design, but does not include individual standard features.").

114. *Shine*, 382 F. Supp. 2d at 607.

115. *Id*. at 608–09 (quoting Sparaco v. Lawler, Matusky & Skelly Eng'rs LLP, 303 F.3d 460, 469 (2d Cir. 2002); *cf*. Peter Pan Fabrics, Inc. v. Martin Weiner Corp., 274 F.2d 487, 489 (2d Cir. 1960)).

116. *Shine*, 382 F. Supp. 2d at 609.

117. *Id*.

118. *Id*. at 610 (quoting Folio Impressions, Inc. v. Byer California, 937 F.2d 759, 764–65 (2d Cir. 1991)).

119. *Id*. at 615.

120. *Id*.

court denied defendants' motion for summary judgment on grounds that reasonable jurors could disagree as to the substantial similarity between the models.[121]

Shine v. Childs highlights two important issues in relations to re-generating building plans for the purposes of building additions or renovations: (1) the arrangement of the elements to give an unmistakable dash of originality; and (2) analysis under the substantial similarity test. In regenerating a building's drawings for the purposes of a building addition or a renovation, drawings would undoubtedly not pass these two standards: the arrangement of elements would maintain an unmistakable dash of originality, and under the substantial similarity test, the two would be substantially similar.[122]

B. Recreation by Tracing or by Physical Building Measurement

The second and third methods by which drawings can be recreated is: (1) by underlaying a digital copy of the original building plan in a computer drafting program and tracing the scanned image;[123] or (2) by the process of physical building measurement and sketching. In essence, either method means that the drawings are created "from scratch." However, tracing scanned images of original building plans re-creates a copy of a copyrighted document—undoubtedly, there would be substantial similarity between the two works. Further, compare tracing to generating drawings from physical building measurements. In physically measuring a building, no plan is held up to a window to be traced over and additional building modifications being accounted for, or, in reality, no plan is underlaid in a computer program to be traced over. Still, the similarity to the previous drawing (which the new drafter has not obtained) *has* to be substantially similar—the similar organization of spaces lends to its functionality and the regeneration is the direct re-expression of the previous architect's idea.[124] Both of which are standards for copyrightability.

In both methods of plan regeneration, the AWPCA still applies and the AWPCA does extend protection to buildings.[125] However, the drafter has considerable skill to regenerate the details of the building, which constitute non-protectable elements.[126] These details such as various symbols, informative legends, standard drawing conventions, etc. create the difference between the drawings that would distinguish the regenerated plan from the original. But, the test is not about the drafter's skill set, but the test is about the copying of an expression, the "look and feel" obtained by a combination of

121. *Id*. at 616.

122. *Id*. at 607.

123. *See* Chief Architect, *supra* note 76 (drafting computer software company gives instructions on how to trace over architectural plans).

124. *See* 17 U.S.C. §§ 101 et al. (2006) (discussing functionality).

125. *See* 17 U.S.C. § 101 (2006) ("An 'architectural work' is the design of a building as embodied in any tangible medium of *expression*, including a building") (emphasis added).

126. Sparaco v. Lawler, Matusky & Skelly Eng'rs LLP, 303 F.3d 460, 467 (2d Cir. 2002).

ideas. Such copying constitutes infringement.

C. Regenerating Building Plans: The Role of BIM

The medium, in which the plans are regenerated, creates further dilemma with the AWCPA and copyright law. BIM programs create a potential dichotomy of issues because of the advanced technology that includes three-dimensional building modeling, embedded building data from which cost estimates and energy usage can be calculated, the ability to "slice" to create floor plans, and the ability to assign multiple users to a single model and document.

1. In General: BIM & Copyright Protection

In BIM programs, the most basic model created is a three-dimensional wire mesh representative of a building: what the building looks like (if already built) or what a building will look like (if the building is in the design stage).[127] The Tenth Circuit in *Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc.* addressed copyright with respect to similar computer-generated models, such as wire mesh frames.[128] The Tenth Circuit held that three-dimensional mesh frames of cars are not copyrightable content because the designs were merely re-expressed in a different medium without any individualizing features.[129] The translation of the car into a three-dimensional mesh frame is a derivative work, which the creator of the model does not retain rights to.[130] "[A] putative creator who merely shifts the medium in which another's creation is expressed has not necessarily added anything beyond the expression contained in the original."[131] Without any additional creative element added to the model, the model is not a derivative work but, in fact, a copy of the original work—it is unoriginal.[132]

Like *Meshwerks*, using a BIM program, a different medium compared to plans or the physical building itself, to regenerate a current building in essence does not give the creator the copyrights to the creation. The creator of the original plans, not the creator of the BIM model, despite the time and effort to create the BIM model, is entitled to the copyrights of the generated BIM model. Pursuant to 17 U.S.C. § 103(a), "protection for a work employing preexisting material in which copyright subsists does not extend to any part of

127. *See* Autodesk, *Revit Architecture 2010 User's Guide: Wireframe Model Graphics Style*, http://docs.autodesk.com/REVIT/2010/ENU/Revit%20Architecture%202010%20Users%20Guide/RAC/index.html?url=WS46b90c3cb2c58cad922804fc7fa4315f-7f83.htm,topicNumber=d0e19621 (last visited Feb. 22, 2011) (depicting wireframe capability of Revit).

128. Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc., 528 F.3d 1258, 1260 (10th Cir. 2008).

129. *Id*. at 1264.

130. *See* 17 U.S.C. § 101 (2006) (defining a "derivative work" as "a work based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted.").

131. Meshwerks. 528 F.3d at 1267.

132. *See id*. at 1268 (discussing the originality requirement).

the work in which such material has been used unlawfully."[133] Thus, such BIM models and in absence of a reuse license or permission from the prior architect, the models are not owned by the creator—the Tenth Circuit would not view such a contribution as "incrementally original," rather view this as an expression of the depiction (of vehicles as vehicles).[134] Seemingly, one can reap the fruit from a tree without ever planting *that* tree.

Thus, regeneration of an existing building in BIM, even for the purposes of a building addition, is copyright infringement; in fact, regardless of the method used to regenerate, such regeneration is an infringement. *Meshwerks* highlights two key issues that are pertinent here: (1) whether buildings regenerated in BIM programs are merely an expression of the depiction of a building as a building—because of its three-dimensional capability, and are not themselves copyrightable as a derivative work, alluding to 17 U.S.C. § 102(a), because they are no more than "raw facts in the world";[135] and (2) whether such BIM models, being a depiction of a building as a building in model form, assuming the model not being an infringement itself, are infringements because floor plans can be easily regenerated (i.e. extracted)—resulting in copyright infringement of the building's original plans. These issues will be addressed below.

2. BIM's Objects: Standardization

With BIM's ability to draft objects, rather than lines, BIM regularizes the output, easily creating plans that are similar to each other. The regularization results in such copies becoming "substantially similar" the original, especially if the original drawing was drafted in a BIM program. Compare the above to the standard detailing that BIM programs offer.[136] While the detailing is not copyrightable, BIM's potential ability to standardize the drawing the process through tools beyond just mere details[137] further pushes the regeneration of a building plan in BIM closer to copyright infringement because the overall "look and feel" conveyed can be more easily regularized into a common drafting pattern. The result is a more coherent, consistent drafting style across the industry—thereby, resulting in building drawings that are regenerated in BIM programs, more likely than not looking remarkably similar.

133. 17 U.S.C. § 103(a).

134. Sheppard Mullin, *Meshworks, Inc. v. Toyota Motor Sales U.S.A.: Good News and Bad News for Creators of New Media Works*, INTELLECTUALPROPERTYLAWBLOG, http://www.intellectualpropertylawblog.com/archives/copyrights-meshworks-inc-v-toyota-motor-sales-usa-good-news-and-bad-news-for-creators-of-new-media-works.html (July 7, 2008) (last visited Mar. 1, 2011) (discussion of 80 to 100 hours to generate vector points to create wire-frames).

135. Meshwerks, 528 F.3d at 1265.

136. *See* Autodesk, AUTODESK REVIT ARCHITECTURE (2010) (noting the standard detailing the program generates or user-generated that a user can manipulate and utilize in the drafting process).

137. *See id.* (noting the program's ability to allow a user to generate standard arrangements of building elements through the use of "families").

3. Alternate Designs & Derivative Works

Additionally, BIM programs, in midst of regenerating a building for the purpose of a building addition or renovation, lend the ability to visualize alternative design options for a building addition or renovation. BIM programs provide an easy route to display various alternative designs for both ease in design of multiple options and for client use. But, this regeneration creates a dilemma: the alternative design(s) may constitute derivative works. Regeneration, in a BIM model for an addition, in this sense, is no different than regeneration in a basic two-dimensional drafting program. The original architect still retains the rights to prepare derivative works, not the creator of the building addition. This creates a dilemma because the creator does not hold the right to new plan.[138]

4. BIM Users: Sharing the Drawing

A further complication is, if there is such copyright infringement in regeneration of an existing copyright in a BIM program, the ability of parties to collaborate actively on the new BIM model.[139] Now, the infringement can extend further into the "users" using copyrighted material. Now, the problem is larger in scale, as there are multiple users of copyrighted architectural documents.

D. The Fair Use Argument

Regenerating a building's architectural plans for the purposes of a building addition or renovation, through various mediums such as BIM, constitutes infringement—"bringing" the architecture world to a halt. Architects should walk away from projects that require regeneration of copyrighted drawings (in absence of prior permission from the original architect, a reuse license, or reservation of such right between owner-architect).[140] This is not fair to creators of building additions or renovations, as such restriction discourages creators from creating. If copyright protection were extended over such instances, this would be reinforcing the idea that copyright protection protects the interest of architects over the interests of society.[141] Such protection inhibits the free flow of ideas.[142] The "fair use" argument should be considered in approaching this dilemma, i.e. a third-party

138. *See* 17 U.S.C. § 106 (2006) (stating the copyright owner has the exclusive right to prepare derivative works).

139. *See* AMERICAN INSTITUTE OF ARCHITECTS, *AIA Integrated Project Delivery: A Guide*, 8–9, http://www.aia.org/aiaucmp/groups/aia/documents/document/aiab085539.pdf (discussing collaborative capabilities of BIM programs).

140. *See* Sabo & Zahn III (advising architects to walk away from projects that cannot obtain a license to use previous drawings or written permission from pervious architect cannot be obtained).

141. James Bingham Bucher, *Reinforcing the Foundation: The Case Against Copyright Protection for Works of Architecture*, 39 EMORY L.J. 1261, 1276 (1990).

142. *Id*. at 1275.

may use the copyrighted work without the permission of author.[143]

To explain, consider the reuse of a building for the purposes of a building addition versus the reuse of building plans for commercial purposes. In *Empire Construction Co.*, a construction company generated mirror images of an architect's plans for commercial purposes, i.e. a profitable entity. While 17 U.S.C. § 107 (2006) does not specifically grant protection to mirror images of copyrighted architectural plans, the court in *Empire Construction Co.* rationalized that mirror image plan usage did not constitute fair use because the plans were reused for "the same functional purpose as that which the plaintiff's plans would have been used."[144] Here, the District Court applied the "same functional purpose" test. Since the plaintiff's apartment plans were used in the same functional purpose as defendant's apartment plans, plaintiff's potential market of those wanting to acquire such plans was destroyed.[145]

While *Empire Construction Co.* is not a building addition, the case illustrates an important point. Applying the same functional purpose test (as part of the fair use argument) to the regeneration of building plans for the purposes of a building addition, the regeneration is for the purposes of having an accurate floor plan, not to reuse the expression of the ideas in order to build a copy of the building and profit from such duplication like in *Empire Construction Co*. and in *Shine*, where the direct re-application of the ideas were for a future built environment. Other similar cases have lent similar ideas. In a case involving an architecture firm based in Beverly Hills, California, Hablinski+Manion won a judgment against a construction company and a design firm for recreating a custom home that Hablinski+Manion designed.[146]

The purpose of the regenerated building drawings is to have plans to work off of that accurately reflect the dimensions, reflecting the actual proportionality and style to help architects design an appropriate addition in scale, style, and dimension. In redeveloping the building through plans and/or BIM models, the new creator is neither profiting off of the building design (beyond the fees that the new creator is being paid for the job) nor getting any additional recognition or publicity from regenerating the plans. This "profitability" standard is key in distinguishing the issue of regeneration.[147]

IV. RESOLUTION

A. Regenerating Plans for Building Additions

The regeneration of a copyrighted building plan leads one to believe that the regeneration constitutes a copyright violation by passing the "substantial

143. Wilhusen, *supra* note 61, at 96.

144. Aitken, Hazen, Hoffman, Miller, P. C. v. Empire Constr. Co., 542 F. Supp. 252, 260 (D. Neb. 1982).

145. *Id.*

146. *Architecture Firm Wins $5.9 Million Judgment in Mansion-Design Case*, AUSTIN BUS. J. (Apr. 13, 2005), available at http://www.bizjournals.com/austin/stories/2005/04/11/daily24.html.

147. *See* Wilshusen et al., *supra* note 61, at 314 (stating the nonprofit standard for "fair use").

similarity" test. The protected expression depicted by the original drawings is embedded in the regenerated drawings—creating an insurmountable barrier. If an owner comes forward to a new architect with the original building plans to incorporate into the new plans for a building addition or renovation, the new architect could be liable for such recreation.[148] This means that architects should walk away from projects that involve regenerating drawings.

Careful consideration should be lent to the fair use doctrine. The drawings are being used neither for the purposes of regenerating the building to profit off the expressed design nor for the main purposes of duplicating the original architect's ideas or expressions; rather, regeneration of the drawings is for the functional purpose of creating accurate and detailed floor plans in order to create an addition that is aligned in scale, style, and dimension. As a matter of interpretation, the fair use doctrine should distinguish regeneration for the purpose of a building addition from regeneration for the purpose of "profitability" as an extension of the functional purpose test.

B. Consideration Not As Derivative Works

Additionally, incorporating alternative building additions into a BIM model, the building addition or alternative design options generated in BIM models should not be regarded as "derivative works." Given the fact that the designs do not envelop a changing of the original building plan to create what could be a new design, the alternate designs should not constitute a derivative work under which the author of the original building plans can take action against. Regenerating a building in a different medium is expressing "raw facts in the world" in a new way while not inherently changing the expression to constitute infringement.[149] Further, such regeneration in a digital model format should not be considered infringement because technology can permit a user to extract infringing floor plans. Such polar dichotomy should not be tolerated to confuse the situation further. The purpose of a building plan is to add onto a building, not necessarily change the original expression of the building plan, which the original author is entitled to be protected on.

If iterations of building additions are considered a "derivative works," this infringement would act as a roadblock to such development of building additions or renovations. Therefore, the Copyright Act should recognize such not as derivative works, but as works that are exempt from being deemed as derivative works because of the reasons mentioned in § IV.A.

C. BIM: As an Evolving Tool

BIM is an advancement from the traditional two-dimensional drafting programs. Regeneration of a building in BIM should not be considered as a new medium in which a building is being conveyed, like *Meshwerks* alluded

148. Werner Sabo & James Zahn, Copyright Update, SABO & ZAHN, http://www.sabozahn.com/pdf/207.pdf (last visited Mar. 1, 2011).

149. Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc., 528 F.3d 1258, 1266 (10th Cir. 2008).

to, that subjects such secondary creator to potential copyright infringement. In the context of building additions and renovations, such regeneration in a different medium should not be considered as infringement; rather, such regeneration as a matter of interpretation should be exempt from infringement. Inevitably, BIM or current or future programs could foreseeable expand this analysis to include further instances in which a new method of copyright infringement could occur. Therefore, the Copyright Act, in sole reference to architectural plans, should recognize rights to the secondary creator, not for the original building's expression re-synthesized in a new medium, but for the rights to the BIM model itself.

V. CONCLUSION

In designing an addition to a building or a renovation for a building, the original building plans are essential. The original building plans are not only necessary for scale, style, and dimension, but current building plans are necessary in order for the local building commissioner to approve the building addition, as building specifications need be met to ensure aesthetic conformity, code compliance, etc. Right now, regeneration of building drawings for purposes of a building addition or renovation is considered copyright infringement and, thus, project prohibitive. Advanced drafting programs, such as BIM, exacerbates and complicates the issue by regeneration through a new medium, and a medium in which alternative designs can be easily displayed, thereby creating derivative works. The bottom line is that the Copyright Act currently fails analyze and address the rationale behind the differentiation between copying drawings for profitability (i.e. a new building as in *Shine v. Childs*) and regenerating drawings for a building addition or renovation (where profitability does not lie in the original building, but in the addition/renovation to the original building). The fair use doctrine should be amended to consider the rationale behind the regeneration—distinguished by the functional purpose test, particularly the "profitability" standard. Therefore, the Copyright Act should consider the drawings regenerated for the purposes of building additions as an exception to copyright infringement.