



(51) International Patent Classification:

G06F 17/50 (2006.01)

(21) International Application Number:

PCT/US2012/038582

(22) International Filing Date:

18 May 2012 (18.05.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/495,980

11 June 2011 (11.06.2011)

US

(71) Applicant (for all designated States except US): DIRT

ENVIRONMENTAL SOLUTIONS INC. [US/US]; 4001

South 700 East, Suite 450, Salt Lake City, UT 84107 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): LOBERG, Barrie, A.

[CA/CA]; Site 15, Box 10 RR1, Millarville, Alberta T0L 1K0 (CA).

(74) Agents: FRODSHAM, Michael, J. et al.; Workman

Nydegger, 1000 Eagle Gate Tower, 60 E. South Temple, Salt Lake City, UT 84111 (US).

(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,

CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every

kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

7 March 2013

(54) Title: AUTOMATED RE-USE OF STRUCTURAL COMPONENTS

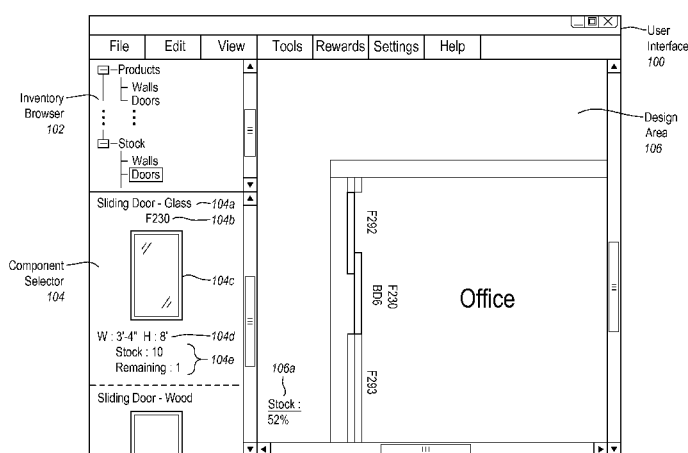


Fig. 1

(57) **Abstract:** Systems, methods, and apparatus allow for easy and efficient structural design and/or reconfiguration while using existing stock components. One or more implementations allow a designer to import a stock file containing an inventory of stock components that are usable as part of a structural design. In particular, one or more implementations allow the stock components to be used in a structural design while tracking, in real-time, the availability of stock components. Furthermore, one or more implementations automatically correlate stock components with existing components of a structural design or with new components as a designer inserts them into the structural design. Additionally, one or more implementations visually distinguish between new components in the structural design and stock components in the structural design. Furthermore, one or more implementations auto-select or modify surrounding components in the structural design to match an inserted stock component.

A. CLASSIFICATION OF SUBJECT MATTER**G06F 17/50(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F 17/50; G06F 19/00; B21D 37/20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: structural design, reuse, component, element, distinguish and computer-aided design.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2008-0188969 A1 (O'MALLEY AUSTIN J. et al.) 07 August 2008 See abstract; pages 1-9; claim 1; and figures 1-8.	11 1-10, 12-20
A	JP 2005-301630 A (HITACHI LTD) 27 October 2005 See abstract; pages 1-11; claims 1-8; and figures 1-21.	1-20
A	WO 02-19177 A1 (TAISEI CORPORATION) 07 March 2002 See abstract; pages 1-7; claim 1; and figures 1-4.	1-20
A	JP 10-334127 A (RICOH CO LTD) 18 December 1998 See abstract; pages 2-4; claims 1-7.	1-20
A	US 2008-0077364 A1 (ROBERT BRUCE WAKELAM) 27 March 2008 See abstract; paragraphs [0006]-[0032]; and figures 1-2.	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

27 DECEMBER 2012 (27.12.2012)

Date of mailing of the international search report

28 DECEMBER 2012 (28.12.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Ahn Ji Hyun

Telephone No. 82-42-481-5767



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/038582

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008-0188969 A1	07.08.2008	EP 2113108 A1 JP 2010-518480 A US 7688318 B2 WO 2008-094170 A1	04.11.2009 27.05.2010 30.03.2010 07.08.2008
JP 2005-301630 A	27.10.2005	JP 4410595 B2	03.02.2010
WO 02-19177 A1	07.03.2002	JP 2002-073691 A	12.03.2002
JP 10-334127 A	18.12.1998	None	
US 2008-0077364 A1	27.03.2008	AU 2001-29524 A1 US 2005-0038636 A1 US 2006-0277007 A1 US 6859768 B1 US 7496487 B2 US 7529650 B2 WO 01-67372 A1	17.09.2001 17.02.2005 07.12.2006 22.02.2005 24.02.2009 05.05.2009 13.09.2001