Virtual collaborative design environments

Scott C. Chase

Explosions of Virtuality Week

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ad:mt
DEPARTMENT OF ARCHITECTURE, DESIGN & MEDIA TECHNOLOGY

AALBORG UNIVERSITY

Design

- Architecture, engineering & construction (AEC)
- Industrial & product design
- Civil & mechanical engineering
- Manufacturing

Distributed & collaborative approaches to design/creation

Open source
- Wikipedia
- 'Open Source' software
- Mechanical Turk (Amazon)
- Crowdspirit/InnoCentive

Business world (innovation & product development)
- Proctor & Gamble
- Mass customisation: Adidas, Benetton
- Threadless.com

How can these be approaches be harnessed for architectural projects?

Virtual worlds as platforms for collaboration and design

- Enhanced testing and feedback processes can replace physical prototyping
- Immersive environments with good communication/collaboration possibilities
- Voice/video/application sharing

- Idea generation
- Design
- Manufacturing

Wikitecture 3.0

Wikitecture 3.0: Wiki-tree

Wikitecture: Contribution assessment

	Theory Shaw	Azwaldo Villota	Keystone Bouchard	Victoria Bury	Lordfly Digeridoo	Daruma Picnic	Omei Turnbull	Veeyawn Spoon-hammer	Average	Eligible Members	Adjusted Average	Payout US Dollars	$240.96 Lindens per US Dollar
Keystone_Bouchard	45.0%	17.0%	15.0%	10.0%	30.0%	20.0%	25.0%	15.0%	22.1%				
Azwaldo_Villota	15.0%	16.0%	15.0%	50.0%	0.0%	15.0%	15.0%	15.0%	17.6%	17.6%	27.6%	$275.93	$66,487.98
Omei_Turnbull	15.0%	11.0%	15.0%	10.0%	30.0%	15.0%	15.0%	10.0%	15.1%	15.1%	23.7%	$236.79	$57,057.06
Daruma_Picnic	10.0%	16.0%	15.0%	10.0%	0.0%	40.0%	15.0%	10.0%	14.5%	14.5%	22.7%	$227.01	$54,699.33
Theory_Shaw	5.0%	17.0%	15.0%	10.0%	30.0%	10.0%	8.0%	15.0%	13.8%				
Veeyawn_Spoonhammer	5.0%	10.0%	8.0%	10.0%	0.0%	0.0%	8.0%	5.0%	5.8%	5.8%	9.0%	$90.02	$21,691.12
Lordfly_Digeridoo	5.0%	6.0%	7.0%	0.0%	10.0%	0.0%	5.0%	10.0%	5.4%	5.4%	8.4%	$84.15	$20,276.48
Zage_Farman	0.0%	5.0%	0.0%	0.0%	0.0%	0.0%	3.0%	5.0%	1.6%	1.6%	2.5%	$25.44	$6,130.10
Bryan_Caldwell	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	5.0%	1.1%	1.1%	1.8%	$17.61	$4,243.91
Bjorn_Collins	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	4.0%	0.0%	0.8%	0.8%	1.2%	$11.74	$2,829.28
Anthony_Reisman	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.6%	0.6%	1.0%	$9.78	$2,357.73
Max_Ballard	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.6%	0.6%	1.0%	$9.78	$2,357.73
Pell_Juran	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.5%	0.8%	$7.83	$1,886.18
Far_Link	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.3%	0.3%	0.4%	$3.91	$943.09
	100.0%	98.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	63.9%	100.0%	$1,000.00	$240,960.00

Project collaboration modes

A 3D architectural model is shared through a platform (e.g. Second life) with a community. Feedbacks/improvements are received and the ones considered adequate will be selected

A network where designers openly choose the leadership, collaborate with each other, propose designs and decide which ones are more valuable

A selected group of the partners chosen by the company. The company defines the objective of the project, defines the rules of collaboration and monitors the whole activity.
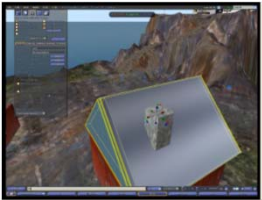
A private group of participants jointly select focus areas and design solutions.

Open

Participation

Closed

	Solver/Feedback Network *aloft*	**Pure open design Community** *Wikitecture*
	VIP Network *PARC*	**Consortium** *Implenia*

Hierarchical   Flat

Governance Model

Observations

- No 'one size fits all' approach to virtual collaboration

- Dynamic governance models

- Combination of virtual worlds with 'traditional' forms of collaboration

Open Architecture Network

- *http://www.openarchitecturenetwork.org/*

- Online, open source community dedicated to improving living conditions through innovative and sustainable design

- Share ideas, designs and plans
- View and review designs posted by others
- Collaborate with each other, people in other professions and community leaders
- Manage design projects from concept to implementation
- Communicate easily amongst team members
- Protect intellectual property rights
- Build a more sustainable future

The future of open source architecture networks

- Increased opportunities for less experienced architects and smaller firms
- Peer review of tendered bids
- Alternative paths to professional registration
- More collaborative relationships between designers, manufacturers and other suppliers

- Architectural and Design based Education and Practice
  through Content & Language Integrated Learning
  using Immersive Virtual Environments
  for 21st Century Skills

- (Architectural) Design T&L

- Virtual environments (design & learning)

- CLIL

- Fragile spaces

Actions to date (partial)

Student workshop (Paris)
Architecture in virtual worlds

Student course (Paris)
Crit-IMPACT

Future: *We are looking for additional collaborators for upcoming T&L actions (Spring 2012)*
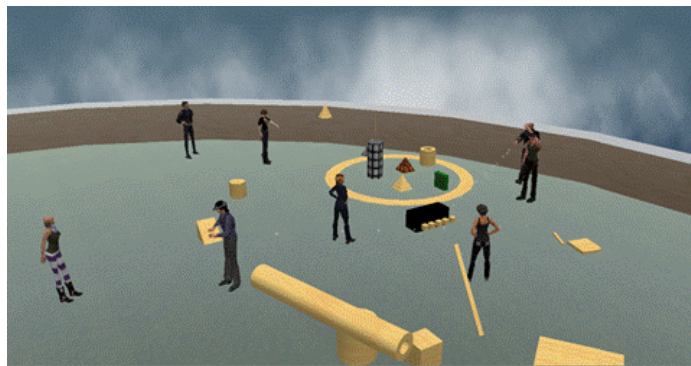
Student workshop (OU)
Working with a design brief