

Ayman Wagdy Mohamed Ibrahim

Architect, Researcher & Assistant Lecturer

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PROFILE

An overlook of my academic background will prove that I have always been a very committed, dedicated, and hard-working student and young researcher. I can contribute effectively in performance based designs, parametric modeling, and daylighting analysis. I am very flexible, willing to learn and develop my research and experimental skills to deliver concrete results during my research period.

EDUCATION

Master of Science in Architecture Politecnico Di Milano, Department of Architecture and Building Technology, Italy Cumulative Degree: 104/110	2010- 2012
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- Architectural Design, Pattern and Design Principles;
- Building Material, Constructional, and Technical Drawings;
- Building Technology;
- Dissertation: New Parametric workflow based on advanced daylighting analysis. [First Class]

Bachelor of Arts/Science in Architecture Faculty of Fine Arts, Architecture Department, Helwan University, Egypt Cumulative Degree: 71.51%, the Seventh, <i>Graduation project:</i> 170/200 (Very Good)	2002- 2007
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- Architectural Design, Pattern and Design Principles;
- Building Material, Constructional, and Technical Drawings;
- Environmental Studies and treatments;
- Civil Engineering, Urban and Regional Planning Basics;
- History and Theories of Architecture;
- Graduation Project: "Complex Shopping Center in Downtown Cairo."

HONORS AND AWARDS

Department Research Grant (10,000 \$), Dept. of Architecture and construction engineering, AUC, Egypt.	2013- 2015
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Scientific Superiority Award , the 3rd place, Egyptian Culture Office in Rome, Italy	2013
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DSU Scholarships (5000 Euro) by the Italian Finance Ministry, Italy	2010- 2012
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PROFESSIONAL REGISTRATION

Egyptian Syndicate of Engineers	2007- Present
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RESEARCH AND TEACHING EXPERIENCE	
Research Associate The American University In Cairo (AUC), Sustainable Research group, Egypt.	Nov. 2013 - Present:
<i>Specialization:</i> Primary –Daylighting and Visual Comfort. Secondary–Thermal Behavior and Energy Performance.	
Part-time Instructor and Teaching Assistant, The American University In Cairo (AUC), Egypt.	Sept.2013- Feb.2014
<i>Taught Courses:</i> AENG 455/4556 - Architectural Design Studio V (4 cr.) Studio on <i>Smart Buildings And High-Tech Architecture.</i>	
<i>Tasks:</i> - Giving lectures & Preparation of course reference materials and visual aids. - Teaching students parametric modeling logic and optimization techniques for building performance.	
Part time lecturer Arab Academy for Science, Technology and Maritime Transport, Egypt Architectural Engineering and Environmental Design Department	Sept. 2013- Feb. 2014
<i>Taught Courses:</i> 3D modeling - Architectural Engineering (3 cr.).	
<i>Tasks:</i> - Giving lectures & Preparation of course reference materials and visual aids. - Teaching students 3D modeling techniques in 3Ds Max and Rhino.	

WORKSHOP INSTRUCTOR	
Grasshopper Essential (48 hours) [completed 4 times] http://grasshopperpolimi.wordpress.com	July. 2013 March. 2014
<ul style="list-style-type: none"> - introducing the parametric design approach. - Mastering the program interface. - Explaining different parametric methods such as; conditional logic, attractors, and advanced patterns. - Creating a complex parametric tower and optimize it based on the direction of attractive view. 	
Introduction to Parametric Design IPD (+54 hours) [completed 5 times] http://grasshopperpolimi.wordpress.com	Sept. 2013 Present:
<ul style="list-style-type: none"> - Design based learning - focusing on practical applications and real life projects. - Recompose parametric ideas by applying the concepts of reverse engineering for several types of projects. - Experimenting various problem-solving approaches creating intelligent parametric designs. 	
Parametric Passive Design PPD (+54 hours) [completed 3 times] http://grasshopperpolimi.wordpress.com	Jan. 2014 Present:
<ul style="list-style-type: none"> - introducing the essential performance evaluation tools for architects and building designers. - Conducting daylight, thermal analysis and Modeling Optimization with multiple parameters. - Generating many passive design techniques for building facades. - Evaluating the simulation results and drawing conclusions for each orientation. 	

PUBLIC LECTURES	
“Bridging The Gap Between Design And Simulation.” Faculty of Fine Arts, El Zamalik, Cairo, Egypt	Dec. 2013
“Simulation-Driven Design.” Ain-Shams University, Cairo, Egypt	March 2014
“Parametric-Driven Design.” Engineering Consultants Group (ECG). Cairo, Egypt	March 2014
“Parametric Daylighting” ECO Research Form, The American University in Cairo (AUC), Egypt	March 2015

PROFESSIONAL EXPERIENCE	
Architect and Head of the R&D Department YBA – ARCHITECTS, Cairo – Egypt	April 2013 – Present
<p><i>Job Description:</i> - Prepare training programs for the architects (Grasshopper and 3Ds Max). - Professional Architect - Creating 3D Rendering, Animation and stereoscope Animation.</p> <p><i>Projects Accomplished:</i></p> <ul style="list-style-type: none"> • ALGERIA EMBASSY IN LIBYA, Tripoli, plot area: 2800 m2 • QATAR EMBASSY IN SOMALIA, Mogadishu, plot area: 20000 m2 • 6 October Office Building IN EGYPT, Cairo, plot area: 8000 m2 • ST 90 Office Building IN EGYPT, Cairo, plot area: 1800 m2 <p><i>Responsibilities:</i> making parametric design, rendering, and post-production.</p>	
Architect and Parametric Modeler SANDRO ROLLA ARCHITECT, Milan – Italy	Feb 2011 – Feb 2013
<p><i>Job Description:</i> - Design Development, Making 3D physical model, Rendering, and post-production.</p> <p><i>Projects Accomplished:</i></p> <ul style="list-style-type: none"> • RIQUALIFICAZIONE ARCHITETTONICA DI LABORATORIO IN COMPLESSO RESIDENZIALE, plot area, Milan, Italy: 1688 m2 • YAMAHA DI MILANIO, Milan, Italy, plot area: 1800 m2 	
Architect SBG (SAUDI BINLADIN GROUP), Jeddah - Saudi Arabia,	Jul 2009 – Aug 2010
<p><i>Job Description:</i> - Making the adapted drawing for each site, - Coordinating drawing from survey department with architecture layout, - Making the final submittal of the drawing to construction sites.</p> <p><i>Projects Accomplished:</i></p> <ul style="list-style-type: none"> • INTEGRATED PROJECT FOR MONITORY OF INTERIOR, 180 different projects site overall the Saudi Arabia 	
Principal Architect ARCHIMATE, Cairo, Egypt	Aug 2007 – Jun 2009
<p><i>Job Description:</i> - 3D modelling. - Managing resources, adjusting materials, lighting, final rendering, and animation. - Professional Rendering and Animator.</p> <p><i>Projects Accomplished:</i></p> <ul style="list-style-type: none"> • NASAMAT AL RIYADH (Phase 1, 2), for Zuhair Fayez Partnership. Plot area: 2,500,000m2. • MARBOAA, (Lydia Resort) for Office Design Firm. Plot area: 2,600,000m2. • CITY STARS, for Maktab AL Tasmemat Al Motakamel. Plot area: 19,200m2. • TRACO OFFICE BUILDING & FACTORY, for (Dr.Mohamed Abd Al Aziez). Plot area: 18,000m2. • AL KHIRAN TOWERS, for Office Design Firm (Competition). Plot area: 20,000m2. • OPEL AUTO SHOW, for ABC Office (Competition) • Dolphin Towers for ABC Office. Plot area: 8,000m2. 	

List of Publications

Published Papers

- **Wagdy, A.**, ElGhazi, Y., Mohamed, S. and Hassan, A. (2015) The Balance Point between Daylight and Thermal Performance Based on Exploiting the Kaleidocycle Typology in Hot Arid Climate of Aswan, Egypt. In: *AEI conference 2015*. Milwaukee, USA: Architectural Engineering Institute.
- **Wagdy, A.**, Morsy, A. and Hegazy, A. (2015). Daylighting optimization for informal settlements in Cairo, Egypt. In: *BSA 2015*. Bozen, Italy: IBPSA-Italy.
- Sherif, A., Sabry, H., Arafa, R. and **Wagdy, A.** (2014). Energy Efficient Hospital Patient Room Design: Effect of Room Shape on Window to Wall Ratio in a Desert Climate. In: *PLEA 2014*. Ahmedabad, India: Center for Advance Research in Building Science & Energy.
- ElGhazi, Y., **Wagdy, A.**, Mohamed, S. and Hassan, A. (2014). Daylighting Driven Design: Optimizing Kaleidocycle Typology for Non-simplified Double Façade in Hot Arid Climate of Cairo, Egypt. In: *BauSIM 2014*. Aachen, Germany: IBPSA - International Building Performance Simulation Association Germany.
- Sherif, A., Sabry, H., **Wagdy, A.** and Arafa, R. (2014). Enhancement of Daylighting and External View as Means for Achieving a Salutogenic Hospital: Results of a Simulation Based Research on Patient Room Layouts. In: *Design & Health 10th World Congress*, Toronto, Canada: Design & Health.
- Sherif, A., Sabry, H. and **Wagdy, A.** (2014). Hospital Patient Room Design for Desert Climates: Effect of Room Shape on Window Design for Daylighting. In: *Second Saudi Forum for Planning and Design of Hospitals*. Riyadh, Saudi Arabia: The Saudi Umran Society, pp.200-213.
- **Wagdy, A.** and Shalaby, M. (2013). Optimizing the external and internal reflectors and ceiling geometry for a deep side lit space: Using validated daylight simulation with genetic optimization algorithm in Cairo, Egypt. In: *Sustainable building conference | SB13 CAIRO*. Aachen, Germany: Shaker Verlag, pp.457-472.
- **Wagdy, A.** (2013). Bridging the gap between design and simulation based on validated daylighting simulation and parametric modelling tools. In: *2013 People and Buildings conference*. London, United Kingdom: University of Westminster - School of Architecture and the Built Environment, pp.186-192.
- **Wagdy, A.** (2013). New parametric workflow based on validated day-lighting simulation. In: *Conference of Building Simulation in Cairo 2013*. Cairo, Egypt: IBPSA - International Building Performance Simulation Association Egypt., pp.412-420.

Peer review Conference (Submitted for review)

- Sherif, A., Sabry, H., **Wagdy, A.** and Arafa, R. (n.d.). The Impact of Window Glazing and Shading Systems on the Daylighting of Hospital Patient Rooms: Simulation Analysis under a Clear Desert Sky. In: *6th International Building Physics Conference (IBPC 2015)*. Torino, Italy: Energy and Buildings.

Peer review Journals (Submitted for review)

- **Wagdy, A.** and Fathy, F. (n.d.). A Parametric Approach for Achieving Optimum Daylighting Performance through Solar Screens in Desert Climates. *Journal of Building Engineering*.
- **Wagdy, A.** Sherif, A., Sabry, H., and Arafa, R. (n.d.). Daylighting of Hospital Patient Rooms: Utilization of Parametric approach based on Brute force algorithm for investigating the External louvers Configuration under a Desert Clear Sky. *Solar Energy*.

Peer review Journals (Work in Progress)

- **Wagdy, A.** and Fathy, F. and Atwa, M. (n.d.). New parametric workflow for speeding up annual daylighting simulations in Radiance: a parallel automation approach. *Journal of Building Performance Simulation*.

Accepted abstracts (Work in Progress)

- **Wagdy, A.** and Fathy, F. (n.d.). An Optimization Approach for Achieving Daylighting Adequacy and Energy Efficiency Using Solar Screen for a South-Oriented Classroom in Hot Arid Climate. In: *BS2015*. Hyderabad, India: IBPSA International.
- Hegazy, A. and **Wagdy, A.** (n.d.). Multivariable Optimization for Zero Over-lit Shading Devices in Hot Climate. In: *BS2015*. Hyderabad, India: IBPSA International.
- **Wagdy, A.** and El Kiki, N. (n.d.). Enhancement of Daylighting by Dynamic Shading Device; Results of a Simulation Based Research on a lecture Hall in Cairo, Egypt. In: *BS2015*. Hyderabad, India: IBPSA International.
- **Wagdy, A.**, Salah, H. and Atwa, M. (n.d.). Skylight Techniques in Library Reading Spaces: Daylighting Study on Desert Clear Sky in Cairo Egypt. In: *BS2015*. Hyderabad, India: IBPSA International.
- **Wagdy, A.**, Atwa, M. and Salah, H. (n.d.). Optimizing Vertical Greenery Systems (VVS): Simulation Analysis for the Effectivity of Vertical Greenery Systems on Energy and Daylighting in Hot Arid Desert Climate. In: *BS2015*. Hyderabad, India: IBPSA International.
- ElGhazi, Y., **Wagdy, A.**, Mohamed, S. and Hassan, A. (n.d.). Simulation Driven Design for Kinetic system; Optimize Kaleidocycle Façade Configuration for Daylighting Adequacy in Hot Arid Climates. In: *BS2015*. Hyderabad, India: IBPSA International.
- Sherif, A., Sabry, H., **Wagdy, A.** and Arafa, R. (n.d.). Daylighting of Hospital Patient Rooms: Utilization of Parametric Workflow and Genetic Algorithms for the Optimization of External Wall and Window Configuration under a Desert Clear Sky. In: *BS2015*. Hyderabad, India: IBPSA International.
- Hegazy, A. and **Wagdy, A.** (n.d.). Optimization of Energy Performance and Daylighting as a Mean for Human Comfort based on Earth-Sheltered Building Typology in Desert Climate of Minia, Egypt. In: *BS2015*. Hyderabad, India: IBPSA International.

Submitted abstracts (Work in Progress)

- **Wagdy, A.** and Hegazy, A. (n.d.). Multivariable Optimization for Window and Wall Shading Devices for maximizing daylight availability and energy savings in Hot Climates. In: *31th International PLEA Conference*. Bologna, Italy: PLEA 2015.
- **Wagdy, A.** and Arafa, R. (n.d.). Voronoi Solar Screen: Optimizing the daylighting and energy efficiency of Patient's room with nested bathroom in hot desert climate. . In: *31th International PLEA Conference*. Bologna, Italy: PLEA 2015.
- **Wagdy, A.** and Shalaby, M. (n.d.). Multivariable Optimization for Office Space Configuration in Desert Climate. . In: *31th International PLEA Conference*. Bologna, Italy: PLEA 2015.