CITATION REPORT List of articles citing

Applying multi-objective genetic algorithms in green building design optimization

DOI: 10.1016/j.buildenv.2004.11.017 Building and Environment, 2005, 40, 1512-1525.

Source: https://exaly.com/paper-pdf/38096198/citation-report.pdf

Version: 2024-04-28

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

| # | Paper | IF | Citations |
|-----|---|-----|-----------|
| 506 | An object-oriented framework for simulation-based green building design optimization with genetic algorithms. 2005 , 19, 5-23 | | 85 |
| 505 | Floor shape optimization for green building design. 2006 , 20, 363-378 | | 165 |
| 504 | Life Cycle Optimization of Extremely Low Energy Dwellings. 2007 , 31, 143-177 | | 72 |
| 503 | Dynamic exergy analysis for capacity expansion of regional power-generation systems: Case study of far West Texas. 2007 , 32, 2167-2186 | | 13 |
| 502 | Environmental and economic evaluation of natural capital appropriation through building construction: practical case study in the Italian context. 2007 , 36, 559-65 | | 25 |
| 501 | Two-step optimal design method using genetic algorithms and CFD-coupled simulation for indoor thermal environments. 2007 , 27, 3-11 | | 20 |
| 500 | Ground heat transfer: A numerical simulation of a full-scale experiment. <i>Building and Environment</i> , 2007 , 42, 1478-1488 | 6.5 | 16 |
| 499 | Comparison of environmental impacts of two residential heating systems. <i>Building and Environment</i> , 2008 , 43, 1072-1081 | 6.5 | 56 |
| 498 | Multidisciplinary grammars supporting design optimization of buildings. 2008 , 18, 197-216 | | 25 |
| 497 | Multi-objective optimization for capacity expansion of regional power-generation systems: Case study of far west Texas. 2008 , 49, 1433-1445 | | 29 |
| 496 | A comparative analysis of two building rating systems Part 1: Evaluation. 2008, 161, 55-63 | | 38 |
| 495 | Life cycle costing: a review of published case studies. 2008 , 23, 240-261 | | 130 |
| 494 | Evolutionary Synthesis of HVAC System Configurations: Experimental Results. 2008 , 14, 57-72 | | 9 |
| 493 | Evolutionary Synthesis of HVAC System Configurations: Algorithm Development (RP-1049). 2008 , 14, 33-55 | | 22 |
| 492 | Green Construction Alternatives Evaluation Using GA-BP Hybrid Algorithm. 2009, | | 1 |
| 491 | Decision support methodologies on the energy efficiency and energy management in buildings. 2009 , 3, 121-146 | | 93 |
| 490 | Notice of Retraction: Research on GA-ANN Based WLAN Indoor Location Method. 2009, | | |

| 489 | Research on RSS based Indoor Location Method. 2009, | | 7 |
|-----|--|-------|-----|
| 488 | Exergetic life-cycle assessment (ELCA) for resource consumption evaluation in the built environment. <i>Building and Environment</i> , 2009 , 44, 11-17 | 6.5 | 57 |
| 487 | Optimization model for the selection of materials using a LEED-based green building rating system in Colombia. <i>Building and Environment</i> , 2009 , 44, 1162-1170 | 6.5 | 174 |
| 486 | Review of utilization of genetic algorithms in heat transfer problems. 2009 , 52, 2169-2188 | | 283 |
| 485 | Optimization of ventilation system design and operation in office environment, Part I: Methodology. <i>Building and Environment</i> , 2009 , 44, 651-656 | 6.5 | 86 |
| 484 | Component-oriented decomposition for multidisciplinary design optimization in building design. 2009 , 23, 12-31 | | 66 |
| 483 | Sustainable building. 2009 , 432-435 | | 2 |
| 482 | A Fuzzy-QFD Approach to the Assessment of Green Construction Alternatives Based on Value Engineering. 2009 , | | 7 |
| 481 | Impact of Sustainability Perceptions on the Purchasability of Materials in Construction Projects. 2010 , | | 4 |
| 480 | Application of improved grey relational projection method to evaluate sustainable building envelope performance. 2010 , 87, 710-720 | | 87 |
| 479 | Multiobjective optimization of building design using TRNSYS simulations, genetic algorithm, and Artificial Neural Network. <i>Building and Environment</i> , 2010 , 45, 739-746 | 6.5 | 429 |
| 478 | A dynamic sky recognition method for use in energy efficient lighting design based on CIE standard general skies. <i>Building and Environment</i> , 2010 , 45, 1319-1328 | 6.5 | 4 |
| 477 | Genetic-algorithm based approach to optimize building envelope design for residential buildings. <i>Building and Environment</i> , 2010 , 45, 1574-1581 | 6.5 | 300 |
| 476 | Assessing multiple criteria for the optimal location of a construction and demolition waste management facility. <i>Building and Environment</i> , 2010 , 45, 2317-2326 | 6.5 | 82 |
| 475 | A generic model of Exergy Assessment for the Environmental Impact of Building Lifecycle. 2010 , 42, 1482-1490 | | 28 |
| 474 | A multi-objective decision model for the improvement of energy efficiency in buildings. 2010 , 35, 5483 | -5496 | 145 |
| 473 | Applying LCA and fuzzy AHP to evaluate building energy conservation. 2011 , 28, 123-141 | | 22 |
| 472 | Sustainability, Architectural Topology and Green Building Evaluations of Kashan-Iran as a Hot-Arid Region. 2011 , 21, 811-819 | | 7 |

| 471 | Potential of geopolymer technology towards green buildings and sustainable cities. 2011 , 21, 1023-103 | 32 | 139 |
|------------|---|-----|-----|
| 470 | Building-Volume Designs with Optimal Life-Cycle Costs. 2011 , 9, 55-75 | | 5 |
| 469 | Optimization of envelope and HVAC systems selection for residential buildings. 2011 , 43, 3373-3382 | | 142 |
| 468 | Design explorations of performance driven geometry in architectural design using parametric modeling and genetic algorithms. 2011 , 25, 656-675 | | 166 |
| 467 | Optimal planning model for school buildings considering the tradeoff of seismic resistance and cost effectiveness: a Taiwan case study. 2011 , 43, 863-879 | | 3 |
| 466 | Design optimization of insulation usage and space conditioning load using energy simulation and genetic algorithm. 2011 , 36, 1659-1667 | | 56 |
| 465 | Development of a multicriteria tool for optimizing the renovation of buildings. 2011 , 88, 1386-1394 | | 188 |
| 464 | ThermalOpt: A methodology for automated BIM-based multidisciplinary thermal simulation for use in optimization environments. 2011 , 4, 293-313 | | 64 |
| 463 | Exergy life cycle assessment model of IO2 zero-emission lenergy system and application. 2011 , 54, 3296-3303 | | 8 |
| 462 | Applying a multi-objective optimization approach for Design of low-emission cost-effective dwellings. <i>Building and Environment</i> , 2011 , 46, 109-123 | 6.5 | 161 |
| 461 | Cost premium prediction of certified green buildings: A neural network approach. <i>Building and Environment</i> , 2011 , 46, 1081-1086 | 6.5 | 75 |
| 460 | Design optimisation for a low energy home in Sydney. 2011 , 43, 1702-1711 | | 86 |
| 459 | Impact of adaptive thermal comfort criteria on building energy use and cooling equipment size using a multi-objective optimization scheme. 2011 , 43, 2055-2067 | | 46 |
| 458 | Towards a System Analysis and Integration Framework for Early Design Trades in Sustainable Building Design. 2011 , | | |
| | | | |
| 457 | Multivariate modeling for a multi-stage green building framework. 2011 , | | 1 |
| 457 456 | Multivariate modeling for a multi-stage green building framework. 2011 , WHAT AFFECTS IMPLEMENTATION OF GREEN BUILDINGS? AN EMPIRICAL STUDY IN HONG KONG. 2012 , 16, 115-125 | | 27 |
| | WHAT AFFECTS IMPLEMENTATION OF GREEN BUILDINGS? AN EMPIRICAL STUDY IN HONG KONG. | | |

(2013-2012)

| 453 | Optimization of energy efficiency and thermal comfort measures for residential buildings in Salamanca, Mexico. 2012 , 54, 540-549 | | 58 |
|-----|---|------|-----|
| 452 | Thermal design of air-conditioned building for tropical climate using admittance method and genetic algorithm. 2012 , 53, 1-6 | | 33 |
| 451 | Systems modelling for sustainable building design. 2012 , 26, 656-668 | | 31 |
| 450 | Design optimization of energy efficient residential buildings in Tunisia. <i>Building and Environment</i> , 2012 , 58, 81-90 | 6.5 | 115 |
| 449 | A cost optimization model for 100% renewable residential energy supply systems. 2012 , 48, 118-127 | | 78 |
| 448 | Comparative study of multiple criteria decision making methods for building design. 2012 , 26, 716-726 | | 93 |
| 447 | Computational Techniques to Manage Natural Resources. 2012 , 3, 117-137 | | |
| 446 | Development of a numerical optimization approach to ventilation system design to control airborne contaminant dispersion and occupant comfort. 2012 , 5, 39-50 | | 7 |
| 445 | Design of low-emission and energy-efficient residential buildings using a multi-objective optimization algorithm. <i>Building and Environment</i> , 2012 , 49, 245-250 | 6.5 | 197 |
| 444 | A case study exploring regulated energy use in domestic buildings using design-of-experiments and multi-objective optimisation. <i>Building and Environment</i> , 2012 , 54, 126-136 | 6.5 | 45 |
| 443 | Energy optimization of building design for different housing units in apartment buildings. 2012 , 94, 330 | -337 | 37 |
| 442 | Optimisation of curtain wall falldes for office buildings by means of PSO algorithm. 2012 , 45, 189-196 | | 63 |
| 441 | Optimum design for indoor humidity by coupling Genetic Algorithm with transient simulation based on Contribution Ratio of Indoor Humidity and Climate analysis. 2012 , 47, 208-216 | | 28 |
| 440 | A methodology for meta-model based optimization in building energy models. 2012 , 47, 292-301 | | 175 |
| 439 | Optimal synthesis and operation of advanced energy supply systems for standard and domotic home. 2012 , 60, 96-105 | | 39 |
| 438 | Application of life-cycle assessment to early stage building design for reduced embodied environmental impacts. <i>Building and Environment</i> , 2013 , 60, 81-92 | 6.5 | 328 |
| 437 | Rough approximation based strategy model between a green building developer and a contractor under a fuzzy environment. 2013 , 46, 54-68 | | 19 |
| 436 | Multi-objective optimization of building envelopes by bacterial memetic algorithms. 2013, | | 1 |

| 435 | A Simulation-Based Tool for Energy Efficient Building Design for a Class of Manufacturing Plants. 2013 , 10, 117-123 | 21 |
|-----|---|-----|
| 434 | Performance study of a multi-objective mathematical programming modelling approach for energy decision-making in buildings. 2013 , 59, 534-542 | 24 |
| 433 | Optimum building energy retrofits under technical and economic uncertainty. 2013 , 57, 324-337 | 116 |
| 432 | Refurbishment decision support tools: A review from a Portuguese user perspective. 2013 , 49, 425-447 | 21 |
| 431 | Multi-objective building energy consumption prediction and optimization for eco-community planning. 2013 , 66, 22-32 | 21 |
| 430 | Sequential equi-marginal optimization method for ranking strategies for thermal building renovation. 2013 , 65, 10-18 | 17 |
| 429 | Refurbishment decision support tools reviewEnergy and life cycle as key aspects to sustainable refurbishment projects. 2013 , 62, 1453-1460 | 50 |
| 428 | A review of computational optimisation methods applied to sustainable building design. 2013 , 22, 230-245 | 394 |
| 427 | Assessing gaps and needs for integrating building performance optimization tools in net zero energy buildings design. 2013 , 60, 110-124 | 253 |
| 426 | Applying Genetic Algorithms to Optimize Energy Efficiency in Buildings. 2013 , 309-333 | 2 |
| 425 | Optimization of passive solar design strategies: A review. 2013 , 25, 177-196 | 132 |
| 424 | Global warming implications of facade parameters: A life cycle assessment of residential buildings in Bahrain. 2013 , 38, 99-108 | 42 |
| 423 | Assessing the effect of facade variations on post-construction period environmental sustainability of residential buildings. 2013 , 6, 68-76 | 3 |
| 422 | ASSESSMENT OF THE SUSTAINABILITY OF THE RENOVATION OF MULTI-APARTMENT BUILDINGS IN RESIDENTIAL AREAS / DAUGIABU I NAMILIETUVOJE ATNAUJINIMO DARNUMO IJ ERTINIMAS. 2013 , 4, 145-154 | 1 |
| 421 | A Critical Review of Green Retrofit Design. 2013, | 1 |
| 420 | A Framework for Integrated Analysis of Building Designs Using a Life-Cycle Assessment and Energy Simulation. 2013 , | 4 |
| 419 | State of the Art on Retrofit Strategies Selection Using Multi-objective Optimization and Genetic Algorithms. 2013 , 279-297 | 1 |
| 418 | A Sustainability-Oriented Multiobjective Optimization Model for Siting and Sizing Distributed Generation Plants in Distribution Systems. 2013 , 2013, 1-11 | 1 |

| 417 | Cost and CO2 Emission Optimization of Steel Reinforced Concrete Columns in High-Rise Buildings. 2013 , 6, 5609-5624 | 53 |
|------------------|---|----|
| 416 | Evaluation and Optimization of a Traditional North-Light Roof on Industrial Plant Energy Consumption. 2013 , 6, 1944-1960 | |
| 415 | Evaluating green performance of building products based on gray relational analysis and analytic hierarchy process. 2013 , 33, n/a-n/a | 12 |
| 4 ¹ 4 | The influence of the building shape on the costs of its construction. 2013 , 18, 90-102 | 18 |
| 413 | Measuring sustainability perceptions of construction materials. 2013 , 13, 217-234 | 14 |
| 412 | A financing model to solve financial barriers for implementing green building projects. 2013 , 2013, 240394 | 11 |
| 411 | Optimum Envelope of a Single-Family House Based on Life Cycle Analysis. 2014 , 4, 95-112 | 7 |
| 410 | A Multi-Objective (Energy, Economic and Environmental Performance) Life Cycle Analysis for Better Building Design. 2014 , 6, 602-614 | 19 |
| 409 | Integration of Sustainability Principles into Construction Project Delivery. 2014, 03, | 4 |
| 408 | THE EFFICIENCY ANALYSIS OF FOUNDATIONS FOR BUILDINGS WITH BEARING WALLS FOR LITHUANIAN SOIL CONDITIONS. 2014 , 20, 893-898 | |
| 407 | Optimization for Heating, Cooling and Lighting Load in Building Fallde Design. 2014 , 57, 1716-1725 | 17 |
| 406 | Transition path towards hybrid systems in China: Obtaining net-zero exergy district using a multi-objective optimization method. 2014 , 85, 524-535 | 15 |
| 405 | A Multiobjective Harmony-Search Algorithm for Building Life-cycle Energy Optimization. 2014, | 5 |
| 404 | A prototype whole-life value optimization tool for fallde design. 2014 , 7, 217-232 | 7 |
| 403 | Policy by Doing: Formulation and Adoption of Policy through Government Leadership. 2014 , 42, 30-54 | 20 |
| 402 | Development and implementation of a Product Life Cycle Optimization model. 2014, | 3 |
| 401 | Designing in complexity: Simulation, integration, and multidisciplinary design optimization for architecture. 2014 , 90, 936-959 | 29 |
| 400 | CAD-Centric Attribution Methodology for Multidisciplinary Optimization Environments: Enabling Parametric Attribution for Efficient Design Space Formulation and Evaluation. 2014 , 28, 284-296 | 4 |

| 399 | An Expert System for the Cost-Optimal Refurbishment of Buildings. 2014 , 899, 599-604 | | 1 |
|-------------------|--|-----|--|
| 398 | A review on simulation-based optimization methods applied to building performance analysis. 2014 , 113, 1043-1058 | | 730 |
| 397 | High throughput computing based distributed genetic algorithm for building energy consumption optimization. 2014 , 76, 92-101 | | 51 |
| 396 | Energy quality management for building clusters and districts (BCDs) through multi-objective optimization. 2014 , 79, 525-533 | | 25 |
| 395 | Engineering design applications of surrogate-assisted optimization techniques. 2014 , 15, 243-265 | | 33 |
| 394 | Use of Modified Cuckoo Search algorithm in the design process of integrated power systems for modern and energy self-sufficient farms. 2014 , 114, 901-908 | | 27 |
| 393 | Algorithms for optimization of building design: A review. 2014 , 31, 101-112 | | 297 |
| 392 | Development of an optimum design program (SUSB-OPTIMUM) for the life cycle CO2 assessment of an apartment house in Korea. <i>Building and Environment</i> , 2014 , 73, 40-54 | 6.5 | 27 |
| 391 | Combined Life Cycle Environmental and Exergetic Assessment of Four Typical Sewage Sludge Treatment Techniques in China. 2014 , 28, 2114-2122 | | 99 |
| 390 | Thermodynamic investigation of building integrated energy efficiency for building retrofit. 2014 , 77, 139-148 | | 13 |
| 389 | Evolutionary optimization technique for site layout planning. 2014 , 11, 48-55 | | 9 |
| | Evolutionary opening action electrical size tayout planning. 2011, 11, 10 33 | | |
| 388 | Minimising the life cycle energy of buildings: Review and analysis. <i>Building and Environment</i> , 2014 , 73, 106-114 | 6.5 | 131 |
| 388 387 | Minimising the life cycle energy of buildings: Review and analysis. <i>Building and Environment</i> , 2014 , | 6.5 | 131 |
| | Minimising the life cycle energy of buildings: Review and analysis. <i>Building and Environment</i> , 2014 , 73, 106-114 | 6.5 | , and the second |
| 387 | Minimising the life cycle energy of buildings: Review and analysis. <i>Building and Environment</i> , 2014 , 73, 106-114 Integration of energy efficient technologies in UK supermarkets. 2014 , 67, 388-393 On the development of multi-linear regression analysis to assess energy consumption in the early | 6.5 | 15 |
| 387 386 | Minimising the life cycle energy of buildings: Review and analysis. <i>Building and Environment</i> , 2014 , 73, 106-114 Integration of energy efficient technologies in UK supermarkets. 2014 , 67, 388-393 On the development of multi-linear regression analysis to assess energy consumption in the early stages of building design. 2014 , 85, 246-255 Energy technology allocation for distributed energy resources: A strategic technology-policy | 6.5 | 15 137 |
| 387 386 385 | Minimising the life cycle energy of buildings: Review and analysis. <i>Building and Environment</i> , 2014 , 73, 106-114 Integration of energy efficient technologies in UK supermarkets. 2014 , 67, 388-393 On the development of multi-linear regression analysis to assess energy consumption in the early stages of building design. 2014 , 85, 246-255 Energy technology allocation for distributed energy resources: A strategic technology-policy framework. 2014 , 72, 783-799 Integrated and multi-hour optimization of office building energy consumption and expenditure. | 6.5 | 15 137 43 |

| 381 | Multi-objective optimization analysis for high efficiency external walls of zero energy buildings (ZEB) in the Mediterranean climate. 2014 , 84, 483-492 | 58 |
|-----|---|----|
| 380 | Multi-criteria optimization analysis of external walls according to ITACA protocol for zero energy buildings in the mediterranean climate. <i>Building and Environment</i> , 2014 , 82, 467-480 | 42 |
| 379 | Multi-variable optimization of thermal energy efficiency retrofitting of buildings using static modelling and genetic algorithms IA case study. <i>Building and Environment</i> , 2014 , 75, 98-107 | 61 |
| 378 | The multicriteria approach in the architecture conception: Defining windows for an office building in Rio de Janeiro. <i>Building and Environment</i> , 2014 , 74, 96-105 | 18 |
| 377 | A design methodology for the economic design of vaccine warehouses in the developing world. <i>Building and Environment</i> , 2014 , 82, 160-170 | 6 |
| 376 | Cost-benefit analysis of Building Information Modeling implementation in building projects through demystification of time-effort distribution curves. <i>Building and Environment</i> , 2014 , 82, 317-327 $^{6.5}$ | 65 |
| 375 | Variability of optimal solutions for building components based on comprehensive life cycle cost analysis. 2014 , 79, 223-231 | 40 |
| 374 | Using self-adaptive optimisation methods to perform sequential optimisation for low-energy building design. 2014 , 81, 18-29 | 19 |
| 373 | A multi-objective feedback approach for evaluating sequential conceptual building design decisions. 2014 , 45, 136-150 | 29 |
| 372 | A fast genetic algorithm for solving architectural design optimization problems. 2015 , 29, 457-469 | 11 |
| 371 | Integration of QFD and Utility Theory to Improve End-User Satisfaction in the Design of High-Performance Buildings. 2015 , | |
| 370 | A Collaborative Decision Model for Low Energy Building Design Optimization. 2015, | O |
| 369 | Real Estate, Construction and Economic Development in Emerging Market Economies. 2015, | 3 |
| 368 | Using the Optional Steps of Eco-Indicator 99 to Evaluate the Operational Energy Consumption in Lifecycle Assessment Value Choices. 2015 , 21, 05015002 | 4 |
| 367 | Challenges in Delivering Green Building Projects: Unearthing the Transaction Costs (TCs). 2015 , 7, 3615-3636 | 44 |
| 366 | Green Template for Life Cycle Assessment of Buildings Based on Building Information Modeling: Focus on Embodied Environmental Impact. 2015 , 7, 16498-16512 | 74 |
| 365 | Developing a BIM-Based Process-Driven Decision-Making Framework for Sustainable Building Envelope Design in the Tropics. 2015 , | 2 |
| 364 | Application of wastewater treatment in sustainable design of green built environments: A review. 2015 , 49, 845-856 | 28 |

| 363 | Time-cost optimization at the conceptual design stage using differential evolution: Case of single family housing projects in Germany. 2015 , | 5 |
|-------------|---|-----|
| 362 | An exergy-based evaluation model for the performance of the fossil fuel life cycle. 2015 , 17, 92 | 4 |
| 361 | Literature review of green retrofit design for commercial buildings with BIM implication. 2015, 4, 188-214 | 27 |
| 3 60 | Using the Big Bang Big Crunch Algorithm for Rational Design of an Energy-Plus Building. 2015 , 117, 911-918 | 14 |
| 359 | Awareness, Drivers, Actions, and Barriers of Sustainable Construction in Kuwait. 2015, 118, 969-983 | 85 |
| 358 | Renewable energy system optimization of low/zero energy buildings using single-objective and multi-objective optimization methods. 2015 , 89, 61-75 | 113 |
| 357 | Design-Build Contractor Selection for Public Sustainable Buildings. 2015 , 31, 04014070 | 20 |
| 356 | Sustainable Building Design: A Review on Recent Metaheuristic Methods. 2015 , 203-223 | 3 |
| 355 | Structural Design of Energy Efficient Buildings Using Multi-Objective BB-BC Algorithm. 2015 , 725-726, 1544-1551 | 2 |
| 354 | A Lagrangian finite element model for estimating the heating and cooling demand of a residential building with a different envelope design. 2015 , 142, 66-79 | 18 |
| 353 | Building energy optimization in the early design stages: A simplified method. 2015 , 105, 88-99 | 71 |
| 352 | Optimisation of night-time ventilation parameters to reduce building's energy consumption by integrating DOE2 and MATLABŒarlier version of this paper is presented in the 34th AIVC conference, Athens, Greece, 25¼6 September 2013.View all notes. 2015 , 34, 516-527 | |
| 351 | Computer-Aided Architectural Design Futures. The Next City - New Technologies and the Future of the Built Environment. 2015 , | 2 |
| 350 | Building information modeling based building design optimization for sustainability. 2015, 105, 139-153 | 99 |
| 349 | Designing an occupancy flow-based controller for airport terminals. 2015 , 36, 51-66 | 5 |
| 348 | Optimizing tradeoffs among housing sustainability objectives. 2015 , 53, 83-94 | 19 |
| 347 | Unweaving the human response in daylighting design. <i>Building and Environment</i> , 2015 , 91, 101-117 6.5 | 49 |
| 346 | Green real estate development in China: State of art and prospect agenda review. 2015, 47, 1-13 | 59 |

(2016-2015)

| 345 | mitigation for Malaysia. 2015 , 85, 100-108 | 40 |
|-----|---|-----|
| 344 | BPOpt: A framework for BIM-based performance optimization. 2015 , 108, 401-412 | 97 |
| 343 | Sustainable Human B uilding Ecosystems. 2015 , | |
| 342 | Sustainable Building Design Optimization Using Building Information Modeling. 2015, | 2 |
| 341 | Criteria Used for Selecting Envelope Wall Systems in Chilean Residential Projects. 2015 , 141, 05015011 | 7 |
| 340 | Recent Advances in Swarm Intelligence and Evolutionary Computation. 2015, | 21 |
| 339 | Application of multi-objective genetic algorithm to optimize energy efficiency and thermal comfort in building design. 2015 , 88, 135-143 | 218 |
| 338 | A multi-objective approach for optimal prioritization of energy efficiency measures in buildings: Model, software and case studies. 2015 , 139, 131-150 | 71 |
| 337 | An integrated energy@mergy approach to building form optimization: Use of EnergyPlus, emergy analysis and Taguchi-regression method. <i>Building and Environment</i> , 2015 , 84, 89-104 | 48 |
| 336 | Hybrid CAD/E platform supporting exploratory architectural design. 2015 , 59, 64-84 | 19 |
| 335 | Designing a whole-life building cost index in Singapore. 2016 , 6, | 4 |
| 334 | Optimal Trade-Offs between Housing Cost and Environmental Performance. 2016 , 22, 04015018 | 2 |
| 333 | Energy Aspects of Green Buildings International Experience. 2016 , 53, 21-28 | 5 |
| 332 | Assessment Framework of Building Facade in Optimizing Indoor Thermal Comfort of Green Building Index (GBI) Certified Office Building. 2016 , 47, 04001 | 2 |
| 331 | A bi-directional systematic design approach to energy optimization for energy-efficient buildings. 2016 , 120, 135-144 | 15 |
| 330 | Genetic algorithm for building envelope calibration. 2016 , 168, 691-705 | 67 |
| 329 | Parametric energy simulation in early design: High-rise residential buildings in urban contexts. Building and Environment, 2016 , 101, 19-31 | 82 |
| 328 | Analysis of Time, Cost, and Environmental Impact Relationships at the Building-Material Level. 2016 , 32, 04016005 | 8 |

| 327 | Early stage decision support for sustainable building renovation [A review. <i>Building and Environment</i> , 2016 , 103, 165-181 | 6.5 | 105 |
|-----|---|-----|-----|
| 326 | Ecological indicators for green building construction. 2016 , 67, 68-77 | | 55 |
| 325 | AN INTEGRATED FUZZY ANP®FD APPROACH FOR GREEN BUILDING ASSESSMENT. 2016 , 22, 551-563 | | 56 |
| 324 | Thermal insulation and cost effectiveness of green-roof systems: An empirical study in Hong Kong. <i>Building and Environment</i> , 2016 , 110, 46-54 | 6.5 | 39 |
| 323 | System Dynamics Framework to Study the Effect of Material Performance on a Building Lifecycle Energy Requirements. 2016 , 30, 04016034 | | 17 |
| 322 | Active Learning in Multi-objective Evolutionary Algorithms for Sustainable Building Design. 2016 , | | 1 |
| 321 | Systematic approach for the life cycle multi-objective optimization of buildings combining objective reduction and surrogate modeling. 2016 , 130, 506-518 | | 35 |
| 320 | A review on building energy efficient design optimization rom the perspective of architects. 2016 , 65, 872-884 | | 123 |
| 319 | Cost-optimal Sizing of Solar Thermal and Photovoltaic Systems for the Heating and Cooling Needs of a Nearly Zero-Energy Building: The Case Study of a Farm Hostel in Italy. 2016 , 91, 528-536 | | 17 |
| 318 | Getting to net zero energy building: Investigating the role of vehicle to home technology. 2016 , 130, 465-476 | | 64 |
| 317 | Parametric study of a cost-optimal, energy efficient office building in Serbia. 2016 , 117, 492-505 | | 15 |
| 316 | Decision support to choose renovation actions in order to reduce house energy consumption [An applied approach. <i>Building and Environment</i> , 2016 , 109, 121-134 | 6.5 | 13 |
| 315 | Multivariable regression analysis to assess energy consumption and CO2 emissions in the early stages of offices design in Chile. 2016 , 133, 738-753 | | 15 |
| 314 | Optimized operation method for an active chilled beam with VAV system. 2016 , 22, 372-378 | | 6 |
| 313 | Ten questions concerning model predictive control for energy efficient buildings. <i>Building and Environment</i> , 2016 , 105, 403-412 | 6.5 | 169 |
| 312 | Genetic algorithm based optimization for photovoltaics integrated building envelope. 2016 , 127, 627-6 | 536 | 20 |
| 311 | Design for structural and energy performance of long span buildings using geometric multi-objective optimization. 2016 , 127, 748-761 | | 49 |
| 310 | Integrating life cycle assessment and multi-objective optimization for economical and environmentally sustainable supply of aggregate. 2016 , 113, 76-85 | | 14 |

| 309 | Multiobjective Optimization Model for Maximizing Sustainability of Existing Buildings. 2016 , 32, 04016003 | 19 |
|-----|---|-----|
| 308 | Implementing multi objective genetic algorithm for life cycle carbon footprint and life cycle cost minimisation: A building refurbishment case study. 2016 , 97, 58-68 | 72 |
| 307 | Passive performance and building form: An optimization framework for early-stage design support. 2016 , 125, 161-179 | 118 |
| 306 | A performance comparison of multi-objective optimization algorithms for solving nearly-zero-energy-building design problems. 2016 , 121, 57-71 | 185 |
| 305 | Evaluation of net-zero energy residential buildings in the MENA region. 2016 , 22, 116-125 | 61 |
| 304 | Sustainable building envelope design by considering energy cost and occupant satisfaction. 2016 , 31, 118-129 | 34 |
| 303 | Analysis and Comparison of Energy Saving Measures Through Marginal Abatement Cost Curves. 2016 , 203-214 | 1 |
| 302 | Parallel Computing Framework for Optimizing Environmental and Economic Performances of Housing Units. 2016 , 30, 04015026 | 1 |
| 301 | Developing a green-building design approach by selective use of systems and techniques. 2016 , 12, 29-50 | 47 |
| 300 | Minimizing Upgrade Cost to Achieve LEED Certification for Existing Buildings. 2016 , 142, 04015073 | 3 |
| 299 | Optimal building envelope design based on simulated performance: History, current status and new potentials. 2016 , 117, 387-398 | 62 |
| 298 | Sustainable material selection for construction industry IA hybrid multi criteria decision making approach. 2016 , 55, 1274-1288 | 130 |
| 297 | The development of life-cycle costing for buildings. 2016 , 44, 319-333 | 76 |
| 296 | Hyper multi-objective evolutionary algorithm for multi-objective optimization problems. 2017 , 21, 5883-5891 | 7 |
| 295 | Optimization method for perforated solar screen design to improve daylighting using orthogonal arrays and climate-based daylight modelling. 2017 , 10, 144-160 | 15 |
| 294 | An optimal model for a building retrofit with LEED standard as reference protocol. 2017 , 139, 22-30 | 22 |
| 293 | Ecodesign tools in the construction sector: Analyzing usage inadequacies with designers' needs. 2017 , 148, 60-72 | 29 |
| 292 | Proposing of new building scheme and composite towards global warming mitigation for Malaysia. 2017 , 10, 176-184 | 9 |

| 291 | Invariant probabilistic sensitivity analysis for building energy models. 2017, 10, 392-405 | | 5 |
|-------------|--|-----|-----|
| 2 90 | Do resilient and sustainable design strategies conflict in commercial buildings? A critical analysis of existing resilient building frameworks and their sustainability implications. 2017 , 146, 295-311 | | 30 |
| 289 | A review on current advances in the energy and environmental performance of buildings towards a more sustainable built environment. 2017 , 77, 845-860 | | 119 |
| 288 | A review of simulation-based urban form generation and optimization for energy-driven urban design. <i>Building and Environment</i> , 2017 , 121, 119-129 | 6.5 | 41 |
| 287 | Genetic Algorithm for Building Optimization. 2017, | | 13 |
| 286 | Life cycle embodied energy analysis of residential buildings: A review of literature to investigate embodied energy parameters. 2017 , 79, 390-413 | | 133 |
| 285 | Multi-objective differential evolution with performance-metric-based self-adaptive mutation operator for chemical and biochemical dynamic optimization problems. 2017 , 59, 33-44 | | 17 |
| 284 | Sustainability in Construction. 2017 , 87-106 | | 1 |
| 283 | The influence of secondary effects on global warming and cost optimization of insulation in the building envelope. <i>Building and Environment</i> , 2017 , 118, 174-183 | 6.5 | 15 |
| 282 | Measuring perception about sustainability of building materials in Kosovo. 2017 , 35, 436-461 | | 4 |
| 281 | Estimation and projection of institutional building electricity consumption. 2017, 143, 43-52 | | 4 |
| 2 80 | Sustainable Value Management for Construction Projects. 2017 , | | 13 |
| 279 | Multiobjective Design Optimization of Building Space Layout, Energy, and Daylighting Performance. 2017 , 31, 04017025 | | 18 |
| 278 | Identifying customer behavioral factors and price premiums of green building purchasing. 2017 , 64, 36-4 | 13 | 20 |
| 277 | Integrated Building Envelope Design Process Combining Parametric Modelling and Multi-Objective Optimization. 2017 , 23, 138-146 | | 4 |
| 276 | Improving sustainable office building operation by using historical data and linear models to predict energy usage. 2017 , 29, 107-117 | | 22 |
| 275 | A multi-objective life cycle approach for optimal building design: A case study in Finnish context. 2017 , 143, 1021-1035 | | 40 |
| 274 | Occupant perception of greenbuildings: Distinguishing physical and psychological factors. <i>Building and Environment</i> , 2017 , 114, 140-147 | 6.5 | 28 |

| 273 | Software-supported identification of an economically optimized retrofit order by minimizing life-cycle costs using a genetic algorithm including constraints. 2017 , 122, 739-744 | | 2 |
|-----|--|-----|-----|
| 272 | An integrated system of text mining technique and case-based reasoning (TM-CBR) for supporting green building design. <i>Building and Environment</i> , 2017 , 124, 388-401 | 6.5 | 48 |
| 271 | A hybridised framework combining integrated methods for environmental Life Cycle Assessment and Life Cycle Costing. 2017 , 168, 846-866 | | 65 |
| 270 | Mapping the knowledge domains of Building Information Modeling (BIM): A bibliometric approach. 2017 , 84, 195-206 | | 130 |
| 269 | Occupancy Profile Variation Analyzed through Generative Modelling to Control Building Energy Behavior. 2017 , 180, 1495-1505 | | 6 |
| 268 | Visualized strategy for predicting buildings energy consumption during early design stage using parametric analysis. 2017 , 13, 127-136 | | 29 |
| 267 | Environmental and Energy Aspects of Construction Industry and Green Buildings. 2017, 54, 24-33 | | 6 |
| 266 | Building Information Modelling and vertical farming. 2017 , 35, 710-724 | | 1 |
| 265 | Identification of Material-related Risks in Green Buildings. 2017 , 196, 956-963 | | 7 |
| 264 | Desired points at minimum cost in the Optimize Energy Performance Peredit of leed certification. 2017 , 23, 796-805 | | 14 |
| 263 | Measuring the impact of dynamic life cycle performance feedback on conceptual building design. 2017 , 164, 726-735 | | 15 |
| 262 | Sequential early-design guidance for residential single-family buildings using a probabilistic metamodel of energy consumption. 2017 , 134, 202-211 | | 34 |
| 261 | Biomimetic reinvention of the construction industry: energy management and sustainability. 2017 , 142, 2721-2727 | | 6 |
| 260 | Actionable insights with less data: guiding early building design decisions with streamlined probabilistic life cycle assessment. 2018 , 23, 1903-1915 | | 24 |
| 259 | A new method for applying choosing by advantages (CBA) multicriteria decision to a large number of design alternatives. 2018 , 167, 30-37 | | 16 |
| 258 | A Study on the Using of Game Theory in Sustainable Construction. 2018 , 11-23 | | 2 |
| 257 | Investigating relationships between cost and CO2 emissions in reinforced concrete structures using a BIM-based design optimisation approach. 2018 , 166, 330-346 | | 30 |
| 256 | Multi-objective optimization-simulation model to improve the buildings design specification in different climate zones of Iran. 2018, 40, 394-415 | | 11 |

| 255 | Sensitivity analysis of energy performance and thermal comfort throughout building design process. 2018 , 164, 278-294 | 35 |
|-----|---|-----|
| 254 | Toolbox for super-structured and super-structure free multi-disciplinary building spatial design optimisation. 2018 , 36, 86-100 | 15 |
| 253 | Maximizing sustainability of existing buildings within limited upgrade budgets. 2018 , 45, 705-716 | 2 |
| 252 | Construction in Nature Versus Nature of Construction. 2018 , 13-27 | |
| 251 | Automated processes of estimating the heating and cooling load for building envelope design optimization. 2018 , 11, 219-233 | 6 |
| 250 | Waste-to-energy: A review of life cycle assessment and its extension methods. 2018 , 36, 3-16 | 41 |
| 249 | Streamlined environmental and cost life-cycle approach for building thermal retrofits: A case of residential buildings in South European climates. 2018 , 172, 2625-2635 | 20 |
| 248 | Towards adoption of building energy simulation and optimization for passive building design: A survey and a review. 2018 , 158, 1306-1316 | 105 |
| 247 | An integrated BIM-based framework for the optimization of the trade-off between embodied and operational energy. 2018 , 158, 1189-1205 | 65 |
| 246 | Linking BIM and Design of Experiments to balance architectural and technical design factors for energy performance. 2018 , 86, 33-43 | 38 |
| 245 | New residential construction building and composite post and beam structure toward global warming mitigation. 2018 , 37, 1394-1402 | 15 |
| 244 | Sustainable Lighting Layout in Urban Areas: Maximizing Implicit Coverage and Minimizing Installation Cost. 2018 , 4, | 1 |
| 243 | Optimal and near-optimal indoor temperature and humidity controls for direct load control and proactive building demand response towards smart grids. 2018 , 96, 250-261 | 14 |
| 242 | Simulation-Based Decision Support Tools in the Early Design Stages of a Green Building Review. 2018 , 10, 3696 | 23 |
| 241 | Multi-Objective Optimisation of the Energy Performance of Lightweight Constructions Combining Evolutionary Algorithms and Life Cycle Cost. 2018 , 11, 1863 | 14 |
| 240 | Are Mental Biases Responsible for the Perceived Comfort Advantage in G reen B uildings?. 2018 , 8, 20 | O |
| 239 | Awareness of green building design in Malaysia. 2018, | 1 |
| 238 | A simulation-based optimization method for designing energy efficient buildings. 2018 , 178, 216-227 | 20 |

| 237 | Sustainable Infrastructure Multi-Criteria Preference Assessment of Alternatives for Early Design. 2018 , 96, 16-28 | | 11 |
|--------------------------|--|-----|---------------------------|
| 236 | Revealing the relationships between the energy parameters of single-family buildings with the use of Self-Organizing Maps. 2018 , 178, 61-70 | | 1 |
| 235 | A review on optimization methods applied in energy-efficient building geometry and envelope design. 2018 , 92, 897-920 | | 144 |
| 234 | Integrated Design and Retrofit of Buildings. 2018 , 313-384 | | |
| 233 | Predicting electricity consumption in a building using an optimized back-propagation and LevenbergMarquardt back-propagation neural network: Case study of a shopping mall in China. 2018 , 42, 176-183 | | 64 |
| 232 | Streamlined life cycle assessment: A case study on tablets and integrated circuits. 2018 , 200, 819-826 | | 5 |
| 231 | Design Optimization Considering Variable Thermal Mass, Insulation, Absorptance of Solar Radiation, and Glazing Ratio Using a Prediction Model and Genetic Algorithm. 2018 , 10, 336 | | 20 |
| 230 | Sensitivity analysis of design parameters and optimal design for zero/low energy buildings in subtropical regions. 2018 , 228, 1280-1291 | | 65 |
| 229 | Optimising embodied carbon and U-value in load bearing walls: A mathematical bi-objective mixed integer programming approach. 2018 , 174, 657-671 | | 11 |
| | | | |
| 228 | HVAC Precooling Optimization for Green Buildings. 2018, | | 5 |
| 228 | HVAC Precooling Optimization for Green Buildings. 2018, Building design-space exploration through quasi-optimization of life cycle impacts and costs. Building and Environment, 2018, 144, 34-44 | 6.5 | 5 |
| | Building design-space exploration through quasi-optimization of life cycle impacts and costs. | 6.5 | |
| 227 | Building design-space exploration through quasi-optimization of life cycle impacts and costs. Building and Environment, 2018, 144, 34-44 | 6.5 | 17 |
| 227 | Building design-space exploration through quasi-optimization of life cycle impacts and costs. Building and Environment, 2018, 144, 34-44 5.7 Energy Quality Management. 2018, 258-314 | 6.5 | 17 |
| 227 226 225 | Building design-space exploration through quasi-optimization of life cycle impacts and costs. Building and Environment, 2018, 144, 34-44 5.7 Energy Quality Management. 2018, 258-314 A bibliometric review of green building research 2000\(2016\). 2019, 62, 74-88 Comparison between two genetic algorithms minimizing carbon footprint of energy and materials | 6.5 | 17 6 115 |
| 227 226 225 | Building design-space exploration through quasi-optimization of life cycle impacts and costs. Building and Environment, 2018, 144, 34-44 5.7 Energy Quality Management. 2018, 258-314 A bibliometric review of green building research 2000\(\textit{2019}, 62, 74-88 \) Comparison between two genetic algorithms minimizing carbon footprint of energy and materials in a residential building. 2019, 12, 224-242 A review of reinforcement learning methodologies for controlling occupant comfort in buildings. | 6.5 | 17 6 115 7 |
| 227 226 225 224 | Building design-space exploration through quasi-optimization of life cycle impacts and costs. <i>Building and Environment</i> , 2018 , 144, 34-44 5.7 Energy Quality Management. 2018 , 258-314 A bibliometric review of green building research 2000\(\textit{2019} \), 62, 74-88 Comparison between two genetic algorithms minimizing carbon footprint of energy and materials in a residential building. 2019 , 12, 224-242 A review of reinforcement learning methodologies for controlling occupant comfort in buildings. 2019 , 51, 101748 Stochastic numerical approach for solving second order nonlinear singular functional differential | 6.5 | 17 6 115 7 51 |

| 219 | Research on the Literature of Green Building Based on the Web of Science: A Scientometric Analysis in CiteSpace (2002🛘018). 2019 , 11, 3716 | 43 |
|-----|---|----|
| 218 | BIM-Based Integrated Design Approach for Low Carbon Green Building Optimization and Sustainable Construction. 2019 , | 1 |
| 217 | Mapping Knowledge in the Economic Areas of Green Building Using Scientometric Analysis. 2019 , 12, 3011 | 14 |
| 216 | Development of an Integrated Quality Function Deployment and Utility Theory Weighting System to Improve Occupants' Satisfaction. 2019 , 25, 04019020 | |
| 215 | A scientometrics study on green building: A DEA application. 2019 , 189-194 | 2 |
| 214 | Exergy-based control strategies for the efficient operation of building energy systems. 2019 , 241, 118277 | 14 |
| 213 | Combining context-aware design-specific data and building performance models to improve building performance predictions during design. 2019 , 107, 102917 | 6 |
| 212 | Equation-based object-oriented modeling and simulation for data center cooling: A case study. 2019 , 186, 108-125 | 19 |
| 211 | Developing a Methodology for Integration of Whole Life Costs into BIM Processes to Assist Design Decision Making. 2019 , 9, 114 | 9 |
| 210 | Optimization of HVAC system energy consumption in a building using artificial neural network and multi-objective genetic algorithm. 2019 , 35, 48-57 | 72 |
| 209 | Simulation-based evolutionary optimization for energy-efficient layout plan design of high-rise residential buildings. 2019 , 231, 1375-1388 | 29 |
| 208 | Unsteady-state exergy analysis for heat conduction of homogeneous solids under periodic boundary conditions. 2019 , 139, 773-788 | 1 |
| 207 | Energy and environmental performance of the office building facade scenarios. 2019, 183, 437-447 | 26 |
| 206 | Meta-models for building energy loads at an arbitrary location. 2019 , 25, 100823 | 6 |
| 205 | A learning automated 3D architecture synthesis model: demonstrating a computer governed design of minimal apartment units based on human perceptual and physical needs. 2019 , 62, 301-312 | 1 |
| 204 | A review of renewable energy assessment methods in green building and green neighborhood rating systems. 2019 , 195, 68-81 | 36 |
| 203 | Developing surrogate ANN for selecting near-optimal building energy renovation methods considering energy consumption, LCC and LCA. 2019 , 25, 100790 | 45 |
| 202 | Optimal Decision-Making of Renewable Energy Systems in Buildings in the Early Design Stage. 2019 , 11, 1471 | 2 |

(2019-2019)

| 201 | Performance-based Generative Architecture Design: A Review on Design Problem Formulation and Software Utilization. 2019 , 22, 55-76 | 6 |
|--------------------------|---|-------------------|
| 200 | Evidence-based ranking of green building design factors according to leading energy modelling tools. 2019 , 47, 101491 | 12 |
| 199 | Optimal power management for nanogrids based on technical information of electric appliances. 2019 , 191, 174-186 | 13 |
| 198 | Definition and Design of Zero Energy Buildings. 2019 , | 1 |
| 197 | Optimal control strategies for hollow core ventilated slab systems. 2019 , 24, 100762 | 1 |
| 196 | An early-stage design optimization for office buildings[fallde providing high-energy performance and daylight. 2019, 28, 1350-1367 | 17 |
| 195 | Scientometric review of global research trends on green buildings in construction journals from 1992 to 2018. 2019 , 190, 69-85 | 88 |
| 194 | A multi-objective optimization model for determining the building design and occupant behaviors based on energy, economic, and environmental performance. 2019 , 174, 823-834 | 34 |
| 193 | Exploring the feasibility of blockchain technology as an infrastructure for improving built asset sustainability. 2019 , 10, 184-199 | 22 |
| | | |
| 192 | . 2019, 1-1 | 1 |
| 192 191 | . 2019, 1-1 Environmental and economic benefits of compliance to green building. 2019, 13, 288 | 1 |
| | | |
| 191 | Environmental and economic benefits of compliance to green building. 2019 , 13, 288 A decision-support methodology for the energy design of sustainable buildings in the early stages. | |
| 191 | Environmental and economic benefits of compliance to green building. 2019 , 13, 288 A decision-support methodology for the energy design of sustainable buildings in the early stages. 2019 , 6, 1684173 Green Performance Evaluation System for Energy-Efficiency-Based Planning for Construction Site | 1 |
| 191 190 189 | Environmental and economic benefits of compliance to green building. 2019, 13, 288 A decision-support methodology for the energy design of sustainable buildings in the early stages. 2019, 6, 1684173 Green Performance Evaluation System for Energy-Efficiency-Based Planning for Construction Site Layout. 2019, 12, 4620 BIM-integrated TOPSIS-Fuzzy framework to optimize selection of sustainable building components. | 1 |
| 191 190 189 | Environmental and economic benefits of compliance to green building. 2019, 13, 288 A decision-support methodology for the energy design of sustainable buildings in the early stages. 2019, 6, 1684173 Green Performance Evaluation System for Energy-Efficiency-Based Planning for Construction Site Layout. 2019, 12, 4620 BIM-integrated TOPSIS-Fuzzy framework to optimize selection of sustainable building components. 2019, 1-20 Methodology for Preliminary Design of Buildings Using Multi-Objective Optimization Based on | 1 16 7 |
| 191 190 189 188 | Environmental and economic benefits of compliance to green building. 2019, 13, 288 A decision-support methodology for the energy design of sustainable buildings in the early stages. 2019, 6, 1684173 Green Performance Evaluation System for Energy-Efficiency-Based Planning for Construction Site Layout. 2019, 12, 4620 BIM-integrated TOPSIS-Fuzzy framework to optimize selection of sustainable building components. 2019, 1-20 Methodology for Preliminary Design of Buildings Using Multi-Objective Optimization Based on Performance Simulation. 2019, 141, 0408011-4080112 Developing a decision-making framework for resolving conflicts when selecting windows and | 1 16 7 8 |

| 183 | Mathematical optimisation of location and design of windows by considering energy performance, lighting and privacy of buildings. 2019 , 8, 117-137 | 4 |
|-----|--|-----|
| 182 | Optimization of site selection for construction and demolition waste recycling plant using genetic algorithm. 2019 , 31, 233-245 | 11 |
| 181 | Energy Efficiency in Building Renovation. 2019 , 675-810 | O |
| 180 | A review of operating performance in green buildings: Energy use, indoor environmental quality and occupant satisfaction. 2019 , 183, 500-514 | 112 |
| 179 | Fallde Design Stages: Issues and Considerations. 2019 , 25, 04018033 | 3 |
| 178 | Performative computational architecture using swarm and evolutionary optimisation: A review. <i>Building and Environment</i> , 2019 , 147, 356-371 | 36 |
| 177 | Life cycle costing as a bottom line for the life cycle sustainability assessment in the solar energy sector: A review. 2019 , 192, 238-262 | 26 |
| 176 | Structured Under-Specification of Life Cycle Impact Assessment Data for Building Assemblies. 2019 , 23, 319-334 | 11 |
| 175 | Inclusion of environmental impacts in life-cycle cost analysis of bridge structures. 2020 , 5, 252-267 | 7 |
| 174 | Optimal sizing of a wind, fuel cell, electrolyzer, battery and supercapacitor system for off-grid applications. 2020 , 45, 5512-5525 | 22 |
| 173 | Optimization of an innovative thermal energy storage technology at low temperatures. 2020 , 14, 238-255 | 2 |
| 172 | Design and optimization of form and facade of an office building using the genetic algorithm. 2020 , 26, 128-140 | 26 |
| 171 | From resources to research framework for identification and prioritization of materials research for sustainable construction. 2020 , 7-8, 100009 | 8 |
| 170 | A parametric approach for performance optimization of residential building design in Beijing. 2020 , 13, 223-235 | 14 |
| 169 | Visualized analysis of global green buildings: Development, barriers and future directions. 2020 , 245, 118775 | 31 |
| 168 | Collaborative optimization between passive design measures and active heating systems for building heating in Qinghai-Tibet plateau of China. 2020 , 147, 683-694 | 11 |
| 167 | Simulation optimisation towards energy efficient green buildings: Current status and future trends. 2020 , 254, 120012 | 41 |
| 166 | A systematic review of genetic algorithm-based multi-objective optimisation for building retrofitting strategies towards energy efficiency. 2020 , 210, 109690 | 37 |

(2020-2020)

| 165 | Investigation on the potential of improving daylight efficiency of office buildings by curved facade optimization. 2020 , 13, 287-303 | | 6 |
|-----|---|-----|----|
| 164 | A bi-level optimization approach for sustainable development and carbon emissions reduction towards construction materials industry: a case study from China. 2020 , 53, 101828 | | 15 |
| 163 | Multi-objective optimisation framework for designing office windows: quality of view, daylight and energy efficiency. 2020 , 261, 114356 | | 53 |
| 162 | Study on Multi-Objective Optimization-Based Climate Responsive Design of Residential Building. 2020 , 13, 238 | | 3 |
| 161 | Multi-objective approach to the optimization of shape and envelope in building energy design. 2020 , 280, 115984 | | 40 |
| 160 | Triple bottom line sustainability assessment of window-to-wall ratio in US office buildings. <i>Building and Environment</i> , 2020 , 182, 107057 | 6.5 | 22 |
| 159 | Unsteady-state exergetic performance comparison of externally and internally insulated building envelopes. 2020 , 163, 120414 | | 3 |
| 158 | Environmental and financial assessment of fallde renovations designed for change: developing optimal scenarios for apartment buildings in Flanders. <i>Building and Environment</i> , 2020 , 183, 107178 | 6.5 | 4 |
| 157 | A performance-based design validation study on EnergyPlus for daylighting analysis. <i>Building and Environment</i> , 2020 , 183, 107088 | 6.5 | 10 |
| 156 | Identification and selection of building fallde's smart materials according to sustainable development goals. 2020 , 26, e00213 | | 9 |
| 155 | Developing a two-criteria framework to rank thermal insulation materials in nearly zero energy buildings using multi-objective optimization approach. 2020 , 276, 122592 | | 21 |
| 154 | Optimization test of a rule-based swarm intelligence simulation for the conceptual design process. 2020 , 34, 477-491 | | 1 |
| 153 | Multi-Criteria Ranking of Green Materials According to the Goals of Sustainable Development. 2020 , 12, 9482 | | 4 |
| 152 | Optimising Window Design on Residential Building Facades by Considering Heat Transfer and Natural Lighting in Nontropical Regions of Australia. 2020 , 10, 206 | | 4 |
| 151 | Comparison of an LCA and LCC for fallde renovation strategies designed for change. 2020 , 172, 18005 | | |
| 150 | Developing a heating and cooling demand prediction model for residential buildings in the cold climate zone of China. 2020 , 588, 032057 | | |
| 149 | BIM for Healthy Buildings: An Integrated Approach of Architectural Design based on IAQ Prediction. 2020 , 12, 10417 | | 5 |
| 148 | Influence of changes in design parameters on sustainable design model of flat plate floor systems in residential or mixed-use buildings. 2020 , 63, 102498 | | 1 |

| 147 | Sustainable criterion selection framework for green building materials IAn optimisation based study of fly-ash Geopolymer concrete. 2020 , 25, e00178 | 30 |
|-----|---|----|
| 146 | Exergetic Life Cycle Assessment: A Review. 2020 , 13, 2684 | 4 |
| 145 | Multi-objective Building Design Optimization under Operational Uncertainties Using the NSGA II Algorithm. 2020 , 10, 88 | 10 |
| 144 | Multi-objective optimization of selected non-traditional machining processes using NSGA-II. 2020 , 421-438 | 2 |
| 143 | Self-Organising Floor Plans in Care Homes. 2020 , 12, 4393 | 1 |
| 142 | Development of the layout method for a high-rise housing complex using parametric algorithm. 2020 , 19, 30-47 | 1 |
| 141 | Implementation and fine-tuning of the Big Bang-Big Crunch optimisation method for use in passive building design. <i>Building and Environment</i> , 2020 , 173, 106731 | 8 |
| 140 | Multi-objective interior design optimization method based on sustainability concepts for post-disaster temporary housing units. <i>Building and Environment</i> , 2020 , 173, 106742 | 15 |
| 139 | Reinforced concrete structural design optimization: A critical review. 2020 , 260, 120623 | 26 |
| 138 | Power Management by LSTM Network for Nanogrids. 2020 , 8, 24081-24097 | 2 |
| 137 | A real industrial building: Modeling, calibration and Pareto optimization of energy retrofit. 2020 , 29, 101186 | 29 |
| 136 | Many-Objective Optimization Design of a Public Building for Energy, Daylighting and Cost Performance Improvement. 2020 , 10, 2435 | 10 |
| 135 | An incentive model between a contractor and multiple subcontractors in a green supply chain based on robust optimization. 2020 , 7, 481-509 | 8 |
| 134 | The interoperability of exergy and Life Cycle Thinking in assessing manufacturing sustainability: A review of hybrid approaches. 2021 , 286, 124932 | 7 |
| 133 | Prioritization of passive measures for energy optimization designing of sustainable hospitals and health centres. 2021 , 35, 101992 | 8 |
| 132 | Sustainable green materials for new construction. 2021 , 37, 3505-3508 | O |
| 131 | Multi-objective optimization (MOO) of a skylight roof system for structure integrity, daylight, and material cost. 2021 , 34, 102056 | 2 |
| 130 | Advanced applications of green materials in construction applications. 2021 , 223-238 | |

| 129 | Reinforcement Learning Methodologies for Controlling Occupant Comfort in Buildings. 2021 , 179-205 | 1 |
|---------------------------------|--|-------------|
| 128 | Optimal investment in the energy system of Zero Emission Neighborhoods considering the refurbishment of the building stock. 2021 , 238, 06001 | |
| 127 | An optimization and evaluation method construction of zero-energy residential building renovation. 2021 , 675, 012079 | 1 |
| 126 | Sustainable site selection using system dynamics; case study LEED-certified project. 1-19 | 1 |
| 125 | A decision support tool for building design: An integrated generative design, optimisation and life cycle performance approach. 2021 , 19, 401-430 | 5 |
| 124 | A CFD-Based Optimization of Building Configuration for Urban Ventilation Potential. 2021, 14, 1447 | O |
| 123 | Optimizing Multi-Family Building Massing for Affordability and Envelope Performance: An Investigation of the Trade-Offs Implicit in Low Rise Residential Buildings. 2021 , 11, 99 | 1 |
| 122 | Embedding energy optimization in organizations: A case study of a Swiss decentralized renewable energy system. 2021 , 235, 110710 | 3 |
| 121 | Physics-based, data-driven approach for predicting natural ventilation of residential high-rise buildings. 2022 , 15, 129-148 | 6 |
| | and the second of the second o | |
| 120 | Solving a novel designed second order nonlinear LaneImden delay differential model using the heuristic techniques. 2021 , 102, 107105 | 21 |
| 119 | | 21 |
| | heuristic techniques. 2021 , 102, 107105 Verification of Energy Usage Based on Standard Building Model Development of Low-Rise | 21 |
| 119 | heuristic techniques. 2021, 102, 107105 Verification of Energy Usage Based on Standard Building Model Development of Low-Rise Residential Buildings in South Korea. 2021, 2021, 1-23 A comprehensive evaluation of the most suitable HVAC system for an industrial building by using a | |
| 119 | heuristic techniques. 2021, 102, 107105 Verification of Energy Usage Based on Standard Building Model Development of Low-Rise Residential Buildings in South Korea. 2021, 2021, 1-23 A comprehensive evaluation of the most suitable HVAC system for an industrial building by using a hybrid building energy simulation and multi criteria decision making framework. 2021, 37, 102153 How the pandemic has affected Turkish housing affordability: why the housing running cost is so | 7 |
| 119 118 117 | Verification of Energy Usage Based on Standard Building Model Development of Low-Rise Residential Buildings in South Korea. 2021, 2021, 1-23 A comprehensive evaluation of the most suitable HVAC system for an industrial building by using a hybrid building energy simulation and multi criteria decision making framework. 2021, 37, 102153 How the pandemic has affected Turkish housing affordability: why the housing running cost is so important. 2021, 8, Linguistic intuitionistic fuzzy PROMETHEE method based on similarity measure for the selection of | 7 |
| 119 118 117 116 | Verification of Energy Usage Based on Standard Building Model Development of Low-Rise Residential Buildings in South Korea. 2021, 2021, 1-23 A comprehensive evaluation of the most suitable HVAC system for an industrial building by using a hybrid building energy simulation and multi criteria decision making framework. 2021, 37, 102153 How the pandemic has affected Turkish housing affordability: why the housing running cost is so important. 2021, 8, Linguistic intuitionistic fuzzy PROMETHEE method based on similarity measure for the selection of sustainable building materials. 1 | 7 0 |
| 119 118 117 116 115 | Verification of Energy Usage Based on Standard Building Model Development of Low-Rise Residential Buildings in South Korea. 2021, 2021, 1-23 A comprehensive evaluation of the most suitable HVAC system for an industrial building by using a hybrid building energy simulation and multi criteria decision making framework. 2021, 37, 102153 How the pandemic has affected Turkish housing affordability: why the housing running cost is so important. 2021, 8, Linguistic intuitionistic fuzzy PROMETHEE method based on similarity measure for the selection of sustainable building materials. 1 Development of a Priority Weights-Based Green Building Rating Model. 2021, 27, 04021008 | 7 0 1 |

| 111 | Performance Optimization Studies on Heating, Cooling and Lighting Energy Systems of Buildings during the Design Stage: A Review. 2021 , 13, 9815 | | 3 |
|-----|---|----|----|
| 110 | Methodology for Simultaneous Optimization of the Thermal, Visual, and Acoustic Performance of Building Envelope. 2021 , 27, | | 2 |
| 109 | Information Processing and Assessment for Improved Computational Energy Modelling. 2021, 9, 37-49 | | |
| 108 | Multi-objective optimization of the multi-story residential building with passive design strategy in South Korea. <i>Building and Environment</i> , 2021 , 203, 108061 | .5 | 10 |
| 107 | Multi-objective optimization (MOO) for high-rise residential buildings layout centered on daylight, visual, and outdoor thermal metrics in China. <i>Building and Environment</i> , 2021 , 205, 108263 | .5 | 7 |
| 106 | Comfort control and improved thermostat location in conference rooms and academic working spaces. <i>Building and Environment</i> , 2021 , 205, 108192 | .5 | 1 |
| 105 | A comprehensive method for optimizing the design of a regular architectural space to improve building performance. 2021 , 7, 981-996 | | 15 |
| 104 | BIM Integrated LCA for Promoting Circular Economy towards Sustainable Construction: An Analytical Review. 2021 , 13, 1310 | | 11 |
| 103 | Role of Building Design in Sustainable Green Development: A Review. 2021 , 55-74 | | |
| 102 | Cost considerations of green buildings. 2021 , 45-57 | | 1 |
| 101 | Council Building Management Practices, Case Studies and Road Ahead. 2012 , 165-179 | | 5 |
| 100 | A Model for Sustainable Site Layout Design of Social Housing with Pareto Genetic Algorithm: SSPM. 2015 , 113-133 | | 1 |
| 99 | Optimized controls for ventilated wall cavities with spray evaporative cooling systems. 2017 , 154, 356-37 | 2 | 4 |
| 98 | Applying the Gaussian Mixture Model to Generate Large Synthetic Data from a Small Data Set. 2020 , | | 3 |
| 97 | Dynamic life cycle carbon and energy analysis for cross-laminated timber in the Southeastern United States. 2020 , 15, 124036 | | 8 |
| 96 | FROM TOOL-MAKING TO TOOL-USING [AND BACK: RATIONALES FOR ADOPTION AND USE OF LCC. 2018 , 22, 179-190 | | 4 |
| 95 | COMPUTATIONAL OPTIMIZATION OF HOUSING COMPLEXES FORMS TO ENHANCE ENERGY EFFICIENCY. 2018 , 24, 193-205 | | 3 |
| 94 | A REVIEW OF LIFE CYCLE RESEARCH OF THE BUILT ENVIRONMENT AT DIFFERENCE SCALES: A CITATION ANALYSIS USING BIG DATA. 2019 , 14, 63-80 | | 3 |

| 93 | Optimization of Office Building Façades in a Warm Summer Continental Climate. 2012 , 03, 222-230 | 7 |
|----|--|---|
| 92 | Multi-objective optimization of the refrigerant-direct convective-radiant cooling system considering the thermal and economic performances. 2021 , 254, 111609 | O |
| 91 | Design optimization of hybrid steel/timber structures for minimal environmental impact and financial cost: A case study. 2022 , 254, 111600 | 0 |
| 90 | Comprehensive Risk Management in Passive Buildings Projects. 2021 , 14, 6830 | 1 |
| 89 | Exergy-Based Life Cycle Assessment of Buildings: Case Studies. 2021 , 13, 11682 | |
| 88 | Computer Assistance for Sustainable Building Design. 2006 , 559-575 | 1 |
| 87 | Artificial Intelligence Applied to Natural Resources Management. 2012 , 1566-1582 | 0 |
| 86 | What Affects Implementation of Green Buildings? An Empirical Study in Hong Kong. 2014 , 1089-1098 | |
| 85 | CO2Emissions Evaluation for Steel Reinforced Concrete Columns Based on the Optimal Structural Design. 2013 , 26, 335-342 | 1 |
| 84 | Sustainable Design Method of Reinforced Concrete Beam Using Embodied Energy Optimization Technique. 2014 , 34, 1053 | 1 |
| 83 | Choosing the Right Technology: Optimized Design of Renewable Supply Systems for Residential Houses. 2014 , 227-245 | |
| 82 | BIM-based Optimal Design of Windows using Genetic Algorithm and Pareto Optimality. 2014 , 30, 213-222 | |
| 81 | Mallenergio vienbulb namo apripinimo energija integruotas vertinimas. 2015 , | 1 |
| 80 | Facilitating Green Building Adoption An Optimization Based Decision Support Tool. | 1 |
| 79 | Interaction Analysis between Cooling-to-Heating Load Ratio and Primary Energy Consumption of HVAC&R System for Building Energy Conservation. 2015 , 27, 113-122 | 1 |
| 78 | Urban Formation Based on Environmental Performance Simulation. 2016 , 301-322 | |
| 77 | Sustainable Buildings. 2016 , 69-89 | |
| 76 | Green practices in the Kuwait building industry: drivers and barriers. 2016 , | |

Herramienta de evaluacili para la toma de decisiones sostenibles, durante el anteproyecto arquitectilico = Evaluation tool for sustainable decision-making during the architectural design. **2017**, 3, 51

| 74 | Toward the Integration of BIM Energy Saving Concepts. 2018 , 124-135 | 1 |
|----|--|---|
| 73 | Standardization of Whole Life Cost Estimation for Early Design Decision-Making Utilizing BIM. 2019 , 773-779 | 2 |
| 72 | MULTI-VARIABLE OPTIMIZATION MODELS FOR BUILDING ENVELOPE DESIGN USING ENERGYPLUS SIMULATION AND METAHEURISTIC ALGORITHMS. 2019 , 12, 81-90 | |
| 71 | Fuzzy Linguistic Integrated Methodology for Sustainable Hospital Building Design. 2020 , 1180-1188 | |
| 70 | Building Information Modelling Capability in an Energetic Simulation Perspective. 2020 , 465-477 | 1 |
| 69 | Cost Optimal Design of Zero Emission Neighborhoods[[ZENs] Energy System. 2020 , 145-163 | |
| 68 | An Approach for Data Extraction, Validation and Correction Using Geometrical Algorithms and Model View Definitions on Building Models. 2021 , 529-543 | 1 |
| 67 | GAN-based method for generative design of visual comfort in underground space. 2021 , 861, 072015 | О |
| 66 | An Extensive Study for a Wide Utilization of Green Architecture Parameters in Built Environment Based on Genetic Schemes. 2021 , 11, 507 | 2 |
| 65 | Automated and qualitative structural evaluation of floor plans for remodeling of apartment housing. 2021 , 8, 376-391 | 2 |
| 64 | Why Did You Turn On That Light?. 2021 , | |
| 63 | Multi-Objective Optimization Method for the Shape of Large-Space Buildings Dominated by Solar Energy Gain in the Early Design Stage. 2021 , 9, | 1 |
| 62 | Time Cost Optimization Using Genetic Algorithm of a Construction Project. 2021 , 909-927 | |
| 61 | Applying data mining techniques to explore technology adoptions, grades and costs of green building projects. 2022 , 45, 103669 | 1 |
| 60 | BIM-based retrofit method (RBIM) for building envelope thermal performance optimization. 2022 , 256, 111693 | 2 |
| 59 | Machine learning for energy performance prediction at the design stage of buildings. 2022 , 66, 12-25 | 4 |
| 58 | Effects of tubular daylight guidance systems on the daylighting performance and energy savings in office buildings under different climate zones. | _ |

Comparison of conventional and passive public utility buildings in Poland. 2021, 1203, 022035 57 Study on non-linear planning model of green building energy consumption under multi-objective 56 optimization. 1 Industry, Innovation and Infrastructure. 2021, 1-11 55 How to minimize the embodied environmental impact of green building envelope? An automatic 54 optimization method. **2022**, 93, 106732 Development of a circularity assessment method for facade systems. 2021, 855, 012008 O 53 Building Geometry as a Variable in Energy, Comfort, and Environmental Design Optimization 52 2 Review from the Perspective of Architects. 2022, 12, 69 Multi-objective optimisation for building integrated photovoltaics (BIPV) roof projects in early 51 3 design phase. 2022, 309, 118476 Early-Phase Performance-Driven Design Using Generative Models. 2022, 87-106 50 Carbon Emission and Cost Analysis of Using Hybrid Fibre White Topping Overlays A Road \circ 49 Rehabilitation Feasibility Study. 2022, 2, 263-280 A multi-objective optimization framework for building-integrated PV envelope design balancing 48 energy and cost. 2022, 342, 130930 Artificial intelligence in green building. 2022, 137, 104192 47 10 Comparison analysis on simplification methods of building performance optimization for passive 46 6.5 building design. *Building and Environment*, **2022**, 216, 108990 Design of type-2 fuzzy fractional-order proportional-integral-derivative controller and multi-objective parameter optimization under load reduction condition of the pumped storage O 45 unit. 2022, 50, 104227 Bina solltma kapasitesine etki eden parametrelerin yan yley ylitemi (YYY) kullan larak 44 incelenmesi. Improving Life Cycle Sustainability and Profitability of Buildings through Optimization: A Case \circ 43 Study. 2022, 12, 497 A study on end of life photovoltaics as a model for developing industrial synergistic networks. 42 Evolutionary Game Analysis of Energy-Saving Renovations of Existing Rural Residential Buildings 41 \circ from the Perspective of Stakeholders. 2022, 14, 5723 Toward a national life cycle assessment tool: Generative design for early decision support. 2022, 40 267, 112144

 \circ

The Impacts of Early Architectural Design Decisions on Building Performance. 2022, 11, 0-0 39 Multiobjective Optimization Model for the Life Cycle Cost-Sustainability Trade-Off Problem of 38 Building Upgrading Using a Generic Sustainability Assessment Tool. 2022, 148, Extreme Gradient Boosting-Based Machine Learning Approach for Green Building Cost Prediction. 5 37 2022, 14, 6651 Hygrothermal calibration and validation of vernacular dwellings: A genetic algorithm-based 36 optimisation methodology. 2022, 55, 104717 Using Intelligent Multi-Objective Optimization and Artificial Neural Networking to Achieve 35 Maximum Solar Radiation with Minimum Volume in the Archetype Urban Block. Lean Screening for Greener Energy Consumption in Retrofitting a Residential Apartment Unit. 2022 34 , 12, 6631 Application of CFD plug-ins integrated into urban and building design platforms for performance 2 33 simulations: A literature review. 2022, The Coupling and Coordinated Development of Green Builds and Financial Development in China. 2022, 19, 8685 Sustainable Building Design Development Knowledge Map: A Visual Analysis Using CiteSpace. 2022 31 3 , 12, 969 Neural Network-based Approach for Identifying the Influence of Factors affecting the Green 30 Building Rating of a Rural Housing Construction. 2022, Architectural Comparison of Chosen Passive Building Standards. 2022, 15, 5-20 29 Cantilever Soldier Pile Design: The Multiobjective Optimization of Cost and CO2 Emission via 28 Pareto Front Analysis. **2022**, 14, 9416 Evaluation of Thermal Insulation Performance of Building Exterior Wall Based on Multiobjective 27 Optimization Algorithm. 2022, 2022, 1-8 Advanced materials contribution towards sustainable development and its construction for green 26 buildings. 2022, Circular utilization of urban tree waste contributes to the mitigation of climate change and 25 \circ eutrophication. 2022, 5, 944-957 Predicting moisture condensation risk on the radiant cooling floor of an office using integration of 24 a genetic algorithm-back-propagation neural network with sensitivity analysis. 2022, Using intelligent multi-objective optimization and artificial neural networking to achieve maximum

solar radiation with minimum volume in the archetype urban block. 2022, 86, 104101

Framework for standardising carbon neutrality in building projects. 2022, 373, 133858

23

22

| 21 | Alternate Material Approach Toward Green Construction. 2023, 149-162 | О |
|----|--|---|
| 20 | A Review of Integrated Design Process for Building Climate Responsiveness. 2022 , 15, 7133 | O |
| 19 | Visual comfort generative design framework based on parametric network in underground space. | 0 |
| 18 | Digital Twin of HVAC system (HVACDT) for multiobjective optimization of energy consumption and thermal comfort based on BIM framework with ANN-MOGA. 1-49 | O |
| 17 | Social Work Management Intelligent System Based on Improved Genetic Algorithm. 2022 , 2022, 1-11 | 0 |
| 16 | Optimal decision-making model for selecting residential green building technologies in China. 10, | O |
| 15 | Multi-objective green design model for prestressed concrete slabs in long-span buildings. 1-19 | 1 |
| 14 | Multi objective optimization of detailed building models with Typical Short Sequences considering sequential and adaptive methods. 2023 , 118, 105645 | O |
| 13 | Developing Green B uilding Design Strategies in the Yangtze River Delta, China through a Coupling Relationship between Geomorphology and Climate. 2023 , 12, 6 | 0 |
| 12 | Sensitivity analysis of design variables in life-cycle environmental impacts of buildings. 2023 , 65, 105749 | O |
| 11 | A comprehensive optimization framework for the design of high-performance building systems. 2023 , 65, 105709 | 0 |
| 10 | Short term energy consumption forecasting using neural basis expansion analysis for interpretable time series. 2022 , 12, | O |
| 9 | Ecological technology of green building in the initial stage of design based on BIM technology. 2023 , 18, | O |
| 8 | Study on Optimization of Building Climate Adaptive Morphology in Cold Regions of China: Case of U-Shaped College Building. 2023 , 337-358 | O |
| 7 | A Sustainable Approach In Advancement Of Earth Sciences & Toundation Engineering Towards Green Construction. 2023 , 1110, 012055 | O |
| 6 | Building energy efficiency prediction for eco living: a reliability analysis and evaluation of feature selection methods. 2023 , 120109 | O |
| 5 | Co-optimization of passive building and active solar heating system based on the objective of minimum carbon emissions. 2023 , 275, 127401 | О |
| 4 | Visualization of green building landscape space environment design based on image processing and artificial intelligence algorithm. | O |

The role of natural resources in the management of environmental sustainability: Machine learning approach. 2023, 82, 103548

Summer thermal comparative experimental study of double plant-skin falldes and double skin falldes. 2023, 72, 106641

TRKNE'DE LEED BELGESIALMIBRO BNALARININ SRDRIJEBIJR MALZEME VE KAYNAK KULLANIMI BAIJAMINDA DEERLENDRIJMESIJ