An Examination Of High-Rise Building Construction Technology: A Study Focused On Hong Kong

1st Wang Zhihua, 2nd Aiman Al-Odaini

Abstract

Time, Financial Resources, And Resource Allocation Are Frequent Sources Of Dispute When Evaluating Production Efficiency In The Construction Industry. This Paper Analyses The Influence Of Various Building Approaches On Production Performance In A High-Rise Public Housing Project In Hong Kong. The Investigator Examined Three Distinct Floor Plans With The Same "Harmony" Configuration. Every System Has A Distinct Methodology For The Fabrication Of Floor Slabs And The Processing Of Material Inputs For Plants. The Cycle Times, Workforce Utilisation, And Expenditures Of Three Systems Are Evaluated And Assessed. Scheme 2, Including A Six-Day Floor Cycle, Was The Most Labour- And Cost-Efficient Choice. Scheme 3, Including A Four-Day Floor Cycle Duration, Is Recommended Because To The Great Priority Placed On Speed In Hong Kong. Constraints Of Space And Finance Required The Adoption Of Several Technological Solutions In Hong Kong. Concurrently, Other Incidents Occurred Due To The Improper Use Of The Technology By Individuals. The Hong Kong Government Formulates Several Regulations And Directives For The Building Sector. The Government Implements Many Rules And Regulations To Oversee Building Projects. The Researcher Diligently Organised The Project By Producing Comprehensive Designs, Specifications, Practical Notes, And Instructions To Guarantee A Secure And Superior Outcome. Numerous Assessments Were Conducted To Guarantee Superior Craftsmanship In Reaction To Employee Misbehaviour And Errors. The Tdr Test Was Conducted To Ensure That The Soil Nail Length Conforms To The Specifications Outlined In The Plan. Cube, Core, And Hammer Tests Were Used To Assess The Quality And Craftsmanship Of The Concrete. The Steel's Quality Was Assessed By A Tensile Test. A Bleeding Test And A Flow Cone Test Were Used To Assess The Quality Of The Cement.

Keywords: Financial Resources, Production Efficiency, Construction Industry, Fabrication, Craftsmanship

1. Introduction

Buildings With Multiple Storeys Of Different Heights Are What Make Hong Kong A Metropolis. But When It Comes To Energy Usage, Skyscrapers Are Real Beasts. Researchers Contribute To Climate Change, The Depletion Of Energy Resources, Pollution In Local And Regional Areas, Damage To Natural Ecosystems, And Excessive Power Usage During Construction And Operation, Which Produces A Number Of Greenhouse Gases. Even While The Researcher May Help With Things That Society Needs And Raise Gdp, The Bad Effects That Building Projects Have On The Environment Gain A Lot Of Attention. Some People Are Worried That The Growing Use Of Energy Throughout The World May Lead To Shortages, Resource Depletion, And Harm To The Environment. A Lot Of People In The Construction Sector Are Doing Their Bit To Protect The Environment Because Of Green Building And Sustainable Development. The Same Goes For The Construction Industry In Hong Kong. People Who Work In Construction Are Constantly Looking For New Technologies That Might Make Sites Safer, Speed Up Building, And Save Money. Using Current Technologies Has Made A Big Difference In The Number Of Accidents In Hong Kong. One Example Is Replacing Wood Planks With Steel Sheet Piling. Instead Of Hand-Dug Caissons, Bore Piles Are Being Employed. It Was Against The Law To Employ Hand-Dug Caissons In Foundation Design (Lam Et Al., 2023).

Sheet Piling Is Put Up Using Hydraulic Pressure Instead Of A Drop Hammer. The Researcher Used Building Models And Internal Load Patterns To Develop A Method For Assessing The Energy Efficiency Of High-Rise Residential Structures In Hong Kong. The Major Results Of The Survey Study Were Utilised To Make This Plan, Which Was Used To Estimate How Much Energy Households Used. The Hong Kong Building Environmental Review Approach Is A Voluntary Way To Look At Buildings In Hong Kong To See How They Might Be Better For The Environment (Pan Et Al., 2023). It Is Now Being Updated And Made Bigger. This Page Presents A Summary Of The Survey Results For Architectural Features And How Energy Is Used.

2. Background Of The Study

Buildings With Multiple Storeys Of Different Heights Are What Make Hong Kong A Metropolis. But When It Comes To Energy Usage, Skyscrapers Are Real Beasts. Researchers Contribute To Climate Change, The Depletion Of Energy Resources, Pollution In Local And Regional Areas, Damage To Natural Ecosystems, And Excessive Power Usage During Construction And Operation, Which Produces A Number Of Greenhouse Gases. Even While The Researcher May Help With Things That Society Needs And Raise Gdp, The Bad Effects That Building Projects Have On The Environment Gain A Lot Of Attention. Some People Are Worried That The Growing Use Of Energy Throughout The World May Lead To Shortages, Resource Depletion, And Harm To The Environment. A Lot Of People In The Construction Sector Are Doing Their Bit To Protect The Environment Because Of Green Building And Sustainable Development. The Same Goes For The Construction Industry In Hong Kong. People Who Work In Construction Are Constantly Looking For New Technologies That Might Make Sites Safer, Speed Up Building, And Save Money. Using Current Technologies Has Made A Big Difference In The Number Of Accidents In Hong Kong. One Example Is Replacing Wood Planks With Steel Sheet Piling. Instead Of Hand-Dug Caissons, Bore Piles Are Being Employed. It Was Against The Law To Employ Hand-Dug Caissons In Foundation Design (Kwok Et Al., 2024).

Instead Of A Drop Hammer, Hydraulic Pressure Is Used To Put Up Sheet Piling. The Researcher Utilised Building Models And Internal Load Patterns To Establish A Way To Evaluate The Energy Efficiency Of High-Rise Residential Buildings In Hong Kong. This Strategy Is Based On The Main Findings Of The Survey Research, Which Were Used To Predict How Much Energy Homes Was Consume. The Hong Kong Building Environmental Review Approach Is A Voluntary Review Method That Aims To Make Buildings In Hong Kong Better For The Environment. It Is Currently Being Changed And Expanded. This Article Gives A Summary Of The Survey Findings For Building Characteristics And Energy End-Use (Manzoor Et Al., 2021).

3. Purpose Of The Study

The Aim Of This Research Was To Investigate The Impact Of Construction Technology, Particularly Prefabrication, On The Construction Of High-Rise Buildings In Hong Kong. With The Rapid Urbanization Of The City, Scarce Land Resources, And Calls For Efficient And Sustainable Construction Practices, The Use Of Prefabrication Has Become A Critical Technological Innovation That Could Affect The Quality, Speed, And Cost-Effectiveness Of High-Rise Building Construction. The Purpose Of This Research Was To Examine The Role Of Prefabrication In Making Construction Efficient, Ensuring Structural Reliability, And Performing The Overall Project In The Context Of Hong Kong's Distinctive Urban Setting. Utilizing The Application Of Simple Random Sampling And Quantitative Approaches, This Study Attempted To Present Empirical Findings On The Correlation Between Prefabrication

And High-Rise Construction Performance. Findings Aimed At Furthering Knowledge Of The Effects Of Contemporary Construction Technologies On Urban Infrastructure Development And Educating Industry Actors, Policymakers, And Construction Practitioners About The Prospective Gains And Challenges Of Prefabrication In High-Density Cities Like Hong Kong.

4. Literature Review

The Life Cycle Energy Analysis Approach Looks At All The Energy That A Building Uses Throughout Its Whole Life. Depending On How It Evolves Through Each Step, A Structure's Life Cycle May Take The Following Forms: Cradle To Grave, Site To Operation, And Cradle To Gate, Or Gate To Operation. The Life Cycle Energy Of A Building Is Made Up Of Both The Energy It Has When It Is Built And The Energy It Uses When It Is Used. Most Of The Time, The Total Embodied Energy Is The Same As The Sum Of The Energies Of The Original And Repeated Embodied States. In The Hong Kong Construction Sector, Contractors Are Seen As Developers. Because Of This, Contractors Will Employ The Latest Technologies To Speed Up The Building Process And Help The Developer Lower The Total Cost Of Construction. Many Firms Leverage These Partnerships To Start New And Exciting Innovations. One Example Is The Top-Down Construction Approach That Uses Precast Concrete Parts. Modern Technologies May Help Save Time And Money While Building Anything. That Said, There Is A Chance Of Many Other Difficulties (Ansah Et Al., 2021). For Example, Water Might Get In Via The Space Between The Precast Facade And The Concrete Part Of The Structure During The Constructing Process. Because Of This, Ap And Rse, The Developer And Contractor, Will Come Up With A New Way To Fix The Issue. Developers And Contractors Are Looking For A Way To Make The Building Site Safer, Faster, And Better While Also Lowering Costs. As A Consequence Of Using Modern Technologies, The Number Of Accidents In Hong Kong Was Going Down. Instead Of The Hand-Dig Caisson Method, Bored Piles Are Being Employed. It Was Not Authorised To Employ Hand-Dug Caissons In The Design Of Foundations. Instead Of Using A Drop Hammer, Hydraulic Pressure Is Employed To Build Sheet Piling. Comprehensive Builders, Who Are In Charge Of Both The Design And Construction Phases Of A Building Project, Are Getting More And More Orders For Construction Projects (Cai Et Al., 2020).

5. Research Question

What Is The Effect Of Prefabrication On High Rise Building In Hong Kong?

6. Methodology

6.1 Research Design: The Quantitative Data Analysis Was Performed With Spss Version 25. The Magnitude And Orientation Of The Statistical Correlation Were Assessed By Computing The Odds Ratio And The 95% Confidence Interval. The Researchers Used A Criteria Of $P < 0.05$ As Statistically Significant. A Descriptive Analysis Was Conducted To Extract Relevant Information From The Data. Data Modified By Computational Tools For Statistical Analysis, Including Information Obtained From Surveys, Polls, And Questionnaires, Is Often Assessed Using Quantitative Methods.

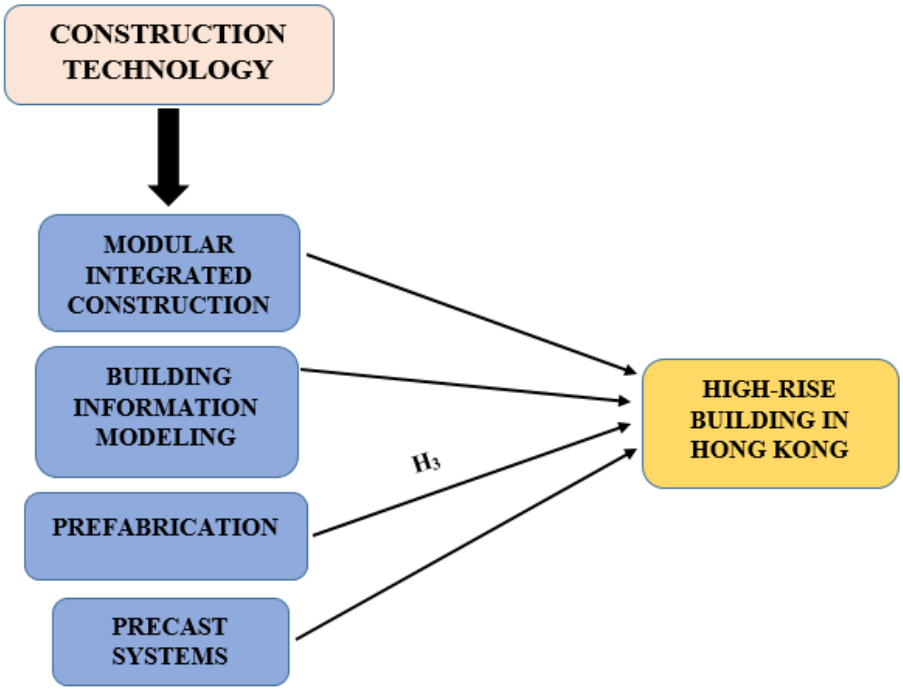
6.2 Sampling: A Preliminary Study Including 34 Chinese Researchers Resulted In The Inclusion Of 1,002 Rao-Soft Pupils In The Final Group Of Investors. Researchers Of Males And Females Were Randomly Selected And Provided With A Total Of 1,226 Questionnaires To Complete. The Research Used 1,015 Questionnaires, Having Received 1,040, With 25 Discarded Owing To Incompleteness.

6.3 Data And Measurement: The Main Way To Gather Data For The Study Was Via A Questionnaire. There Were Two Parts To The Survey: (A) General Demographic Information And (B) Answers On The Qualities Of Online And Offline Channels, Which Were Rated On A 5-Point Likert Scale. Most Of The Secondary Data Came From Internet Resources, Although It Was Also Gathered From Other Places.

6.4 Statistical Software: The Statistical Analysis Was Performed With Spss 25 And Ms Excel.

6.5 Statistical Tools: Descriptive Analysis Was Used To Comprehend The Essential Attributes Of The Data. The Researcher Must Analyse The Data With Anova.

7. Conceptual Framework



8. Result

❖ Factor Analysis

A Common Application Of Factor Analysis (Fa) Is To Find Hidden Variables In Data That Is Already Evident. When There Are No Apparent Visual Or Diagnostic Clues, Regression Coefficients Are Sometimes Utilised To Provide Ratings. Models Are Very Important For Success In Fa. The Goals Of Modelling Are To Find Mistakes, Breaches, And Obvious Connections. The Kaiser-Meyer-Olkin (Kmo) Test Is A Way To Check The Quality Of Datasets That Come From Numerous Regression Analyses. The Researcher Verifies That The Model And Sample Variables Are Representative. The Numbers Reveal That The Data Is Redundant. Lowering Proportions Makes It Easier To Interpret Facts. The Kmo Output Might Be Anywhere From Zero To One. A Kmo Score Between 0.8 And 1 Shows That The Sample Size Is Good. Kaiser Says That These Are The Amounts That Are Allowed: Kaiser's Approval Requirements Are As Follows:

0.050 To 0.059 Is Bad, While 0.60 To 0.69 Is Not Good Enough.

Middle Grades Are Usually Between 0.70 And 0.79.

Showing A Quality Point Score Between 0.80 And 0.89.

The Range Of 0.90 To 1.00 Amazes Them.

Kmo And Bartlett's Test For Adequate Sampling Kaiser-Meyer-Olkin Score: 0.839

The Outcomes Of Bartlett's Test Of Sphericity Are As Follows: The Chi-Square Statistic Is Around

190, Having 190 Degrees Of Freedom And A Significance Threshold Of .000.

Table1: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.839
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

Bartlett's Test Of Sphericity Further Validated The Importance Of The Correlation Matrices. The Kaiser-Meyer-Olkin Metric Of Sampling Adequacy Is 0.839. Utilising Bartlett's Sphericity Test, Researchers Obtained A P-Value Of 0.00. The Results Of Bartlett's Sphericity Test Indicated That The Correlation Matrix Is Erroneous.

❖ **Dependent Variable**

- **High Rise Building In Hong Kong:**

The Council On Tall Projects And Urban Habitat Says That By 2025, 567 Of Hong Kong's More Than 9,000 High-Rise Projects Would Be Higher Than 150 Meters (492 Feet), And More Than 4,000 Of Them Will Be Skyscrapers. There Are More Than 9,000 High-Rise Projects In Hong Kong As A Whole. The International Commerce Centre Is Not Only The Tallest Building In Hong Kong, But It Is Also The Thirteenth Tallest Building In The World. It Has 108 Storeys And Is 484 Meters (1,588 Ft) Tall. Hong Kong Is Still The Tallest City In The World, With A Total Built-Up Height Of Around 333.8 Kilometres (207 Miles). The City's Height Is Made Up Of Its Many Skyscrapers. Hong Kong Is Also The Only City In The World That Can Compete With This In Terms Of The Number Of Buildings That Are 100 Meters (328 Feet) And 150 Meters (492 Feet) Tall, As Well As The Number Of People Who Reside On The Fifteenth Level Or Above. This Is Because The City Has A Lot Of People Living Close Together. Most Of Hong Kong's Buildings Are On Kowloon And The Northern Shore Of Hong Kong Island, However There Are A Few New Satellite Towns In The New Territories, Such Tsuen Wan And Sha Tin. The Investigator Could Find More Skyscrapers Along The Mtr Stations And Along The Southern Coast Of Hong Kong Island (Gao Et Al., 2024).

❖ **Independent Variable**

- **Construction Technology:**

Construction Technology Is The Newest Tools And Methods That The Industry Uses To Make Projects Safer, More Efficient, And Better For The Environment, As Well As To Save Money. Instead, The Researcher Was Making The Parts Of The Task That Are The Most Dangerous And Need The Most Work Easier. To Do Their Jobs, Which Involve Planning, Designing, Constructing, And Managing Construction Projects, Modern Construction Professionals Need A Wide Range Of Hardware And Software Tools That Are All In Their "Toolbox." These

Things Are In Their "Toolbox." Construction Technology Has Made Building Operations More Efficient By Providing Tools, Equipment, And Software Programs. It Has Also Made The Steps That Happen Before Construction Begins Easier. Construction Technology Has Made It Feasible To Provide These Items. If The Researcher Uses Technology That Makes It Easier To Organise Bids, Organise Documents, And Communicate, Construction Managers And Their Teams May Start Each Phase Of A Project Off On The Right Foot. Some Of The Most Groundbreaking Changes In The Construction Industry Are Applications For Project Management That Work With Mobile Devices, Smart Tools And Equipment, Digital Blueprints, Self-Driving Machines And 3d Printing Technology, Which Makes It Possible To Make Building Materials That Are Both Cheap And Of High Quality. These Innovations Might Change The Construction Business For The Better (Skibniewski, 2025).

❖ **Factor**

- **Prefabrication:**

"Prefabrication" Is A Method Of Constructing In Which Parts Of A Structure, Such Modules Or Whole Units, Are Made In A Controlled Setting Away From The Construction Site. The Goal Is To Save Time And Money. After That, These Parts Are Moved To The Place Where They Will Be Built, Installed, Or Linked. This Method Takes Into Account All The Different Types Of Parts. These Parts May Be Simple, Non-Volumetric Parts (Like Wall Panels Or Staircases), More Complex, Volumetric Modules (Like Prefabricated Bathrooms Or Room Sections), Or Entire, Modular Parts That Make Up Major Parts Of The Construction. Some Of The Aims That May Be Reached By Prefabrication Include Lowering The Overall Cost Of A Project, Cutting Down On The Time Needed To Build, Enhancing Quality Control, Cutting Down On The Number Of Workers Needed On-Site, And Cutting Down On Waste And Environmental Harm (Chauhan Et Al., 2022).

- **Relationship Between Prefabrication And High Rise Building In Hong Kong**

In Certain Quarters, Prefabrication Is Also Called Modular Integrated Construction (Mic). It Has Been Proved To Have A Big Effect On How High-Rise Buildings Are Built In Hong Kong. This Has Been Shown To Be True. Prefabrication Made Building Faster, Better, And Less Likely To Have Mistaken. This Was Achievable Because Repetitive Tasks Were Moved To Control Industrial Settings. This Is Because Prefabrication Was Done In Factories Where Everything Was Very Rigorous. Better Waste Management And A More Predictable Use Of Resources Were Two Other Things That Helped Lower Embodied Carbon In Many Case Studies, Including The One Done In Hong Kong. But For Engineers To Be Able To Use Prefabrication On Truly Tall Buildings, They Would Have To Make Big Changes To The Technology For Wind, Connections, And Vertical Service Integration. The Researcher Had To Do This In Order To Get Done What Researcher Had Planned To Do. Also, To Make It Possible For Volumetric Modules To Be Used In Tall Structures Without Costing Too Much, The Government Has To Provide Greater Incentives (Lee Et Al., 2022). Recent Project Evaluations Conducted In Hong Kong Have Shown That The Use Of Mic And Prefabrication May Reduce On-Site Labour Intensity And Shorten Project Timelines. On The Other Hand, It Makes Things Harder When It Comes To Transportation Logistics, Structural Integration, And Getting The Firm Off The Ground With Initial Capital. To Turn The Theoretical Advantages Of Prefabrication Into Real Benefits For Building High-Rise Buildings, The Government Has Come Up With Ways To Do This, Such As Giving Discounts On Floor Space, Giving Money, And Speeding Up Permits. These Steps Are Meant To Make It Easier To Provide These Advantages To Others. In Addition, Several Pilot Projects That Have Been Successfully Accomplished Have Made A Big Difference In The Total Endeavour. There Was A Lot Of Tension In The Relationship. When Legislative Backing, Engineering Adaptation, And

Supply-Chain Preparation Were All In Sync, Prefabrication Had A Positive Effect On The Results Of High-Rise Construction Projects In Hong Kong In Terms Of Time, Quality, And Sustainability. When Prefabrication Was Included To The Building Process, This Was The Situation. However, The Benefits Were Diminished To A Very Negligible Extent In The Absence Of Any Of These Components (Besklubova Et Al., 2025).

After The Above Discussion, The Researcher Formulated The Following Hypothesis To Investigate The Relationship Between Prefabrication And High Rise Building In Hong Kong.
H_{01}: "There Is No Significant Relationship Between Prefabrication And High Rise Building In Hong Kong".
H_1: "There Is A Significant Relationship Between Prefabrication And High Rise Building In Hong Kong".

Table 2: H_1 ANOVA Test

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	39588.620	384	5675.514	1042.144	.000
Within Groups	492.770	630	5.446		
Total	40081.390	1014			

This Inquiry Has Yielded A Significant Discovery. The F Value Is 1042.144, Indicating Significance With A P-Value Of 0.000, Which Is Below The Alpha Threshold Of 0.05. This Denotes The ***"H_1: There Is A Significant Relationship Prefabrication And High Rise Building In Hong Kong"*** The Alternative Hypothesis Is Accepted While The Null Hypothesis Is Rejected.

9. Discussion

Based On The Information In This Article, The Building Method Called Prefabrication Was Very Important For The Expansion Of Hong Kong's Skyscrapers Throughout The Years. The Findings Showed That Prefabrication Made It Feasible To Complete Projects Faster, Enhanced Quality Control, And Required Fewer Workers On Construction Sites Than Before. The City's Objective Was To Make Urban Expansion That Was Both Sustainable And Efficient, And It Was Able To Do So. Hong Kong Was Able To Ease Its Scarcity Of Trained Workers By Shifting A Lot Of The Construction Process To A Factory Via Prefabrication. This Was Made Possible By New Technologies. This Drastically Cut Down On The Amount Of Interruptions That Occurred On-Site And Made The Safety Rules For The Workplace Better. Also, It Was Found That The Technique Might Cut Down On The Amount Of Trash And Make The Environment More Sustainable. This Is In Line With The Government's Long-Term Goals Of Developing Ecologically Friendly And Innovative Building Methods. The Results Of The Study Show That There Are Still A Lot Of Problems That Need To Be Fixed. Some Of These Limitations Include Problems With Transportation, High Initial Costs, And The Requirement For Specialist Supply Chains To Make Modular Construction Solutions Work. Regulatory Frameworks And Site-Specific Issues Were Other Things That Helped Determine How Many Benefits Were Actually Given. The Panel Decided That Prefabrication Might Change The Way High-Rise Buildings Are Built In Hong Kong If The Right Combination Of Government Incentives, Industry Cooperation, And Continual Technological Advancement Is Used. The Committee Came At This Decision. This Led To The Creation Of Prefabrication As A Way To Fix Problems That Came Up During Construction And Make Hong Kong's Urban

Infrastructure More Sustainable, Better Quality, And Ready For The Future. Prefabrication Helped Fix Problems With Building.

10. Conclusion

The Results Of This Research Show That Prefabrication Was A Significant Part Of Building Technology That Helped Build Hong Kong's Highest Skyscrapers. This Was Possible Because Parts Had Been Made Ahead Of Time. The Research Shows That Prefabrication Is A Good Way To Finish A Project Faster And Make The Finished Product Better By Using Controlled Manufacturing Processes. In Addition, This Makes The Constructing Process More Efficient. This Helped With Safety And Sustainability In A City With A Lot Of People By Cutting Down On The Amount Of Personnel And Materials That Needed To Be On-Site. This Was Done By Cutting Down On The Quantity Of Trash That Was Produced. To Reach This Goal, It Was Important To Reduce The Amount Of Material Waste. Also, Even Though It Had These Advantages, It Wasn't Widely Used Since It Was Hard To Transport, Cost A Lot Up Front, And Needed Strong Backing From Both Industry Experts And Government Regulators. The Research That Was Looked At Showed That Prefabrication Played A Big Part In Building High-Rise Buildings In Hong Kong. This Gave Us A Possible Way To Go Ahead With Construction Techniques That Were Better For The Environment, More Productive, And More Innovative.

References

1. Ansah, M. K., Chen, X., Yang, H., Lu, L., & Lam, P. T. (2021). Developing An Automated Bim-Based Life Cycle Assessment Approach For Modularly Designed High-Rise Buildings. Environmental Impact Assessment Review, 90, 106618.
2. Besklubova, S., Zhong, R. Y., & Tan, B. Q. (2025). An Integrated Model Of A Prefabrication Hub Feasibility Assessment: A Hong Kong Case. International Journal Of Construction Management, 25(11), 1300-1312.
3. Cai, S., Ma, Z., Skibniewski, M. J., Bao, S., & Wang, H. (2020). Construction Automation And Robotics For High-Rise Buildings: Development Priorities And Key Challenges. Journal Of Construction Engineering And Management, 146(8), 04020096.
4. Chauhan, K., Peltokorpi, A., Lavikka, R., & Seppänen, O. (2022). To Prefabricate Or Not? A Method For Evaluating The Impact Of Prefabrication In Building Construction. Construction Innovation, 24(7), 65-82.
5. Gao, K., Fong, K. F., Lee, C. K., Lau, K. K. L., & Ng, E. (2024). Balancing Thermal Comfort And Energy Efficiency In High-Rise Public Housing In Hong Kong: Insights And Recommendations. Journal Of Cleaner Production, 437, 140741.
6. Kwok, T. W., Chang, S., & Li, H. (2024). Factors Affecting Unitized Curtain Wall System Adoption For Hong Kong's High-Rise Residential Buildings: A Multi-Stakeholder Perspective. *Engineering, Construction And Architectural Management*, *31*(2), 526-543.
7. Lam, E. W., Chan, A. P., Olawumi, T. O., Wong, I., & Kazeem, K. O. (2023). Facilitators And Benefits Of Implementing Lean Premise Design: A Case Of Hong Kong High-Rise Buildings. *Journal Of Building Engineering*, *80*, 108013.
8. Lee, W. M. W., Lu, W., & Xue, F. (2022). Prefabrication In Hong Kong's High-Rise Residential Construction: Evolution And Effect On Waste Minimization. In Proceedings Of The 26th International Symposium On Advancement Of Construction Management And Real Estate (Pp. 308–323).
9. Manzoor, B., Othman, I., Kang, J. M., & Geem, Z. W. (2021). Influence Of Building Information Modeling (Bim) Implementation In High-Rise Buildings Towards Sustainability. *Applied Sciences*, *11*(16), 7626.

10. Pan, W., Yang, Y., & Pan, M. (2023). Implementing Modular Integrated Construction In High-Rise High-Density Cities: Perspectives In Hong Kong. *Building Research & Information*, *51*(3), 354-368.
11. Skibniewski, M. J. (2025). The Present And Future Of Smart Construction Technologies. Engineering, 44, 21-23.